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A TREATISE ON DISEASES

OF THE

RECTUM, ANUS, AND SIGMOID FLEXURE

BY

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WITH SIX CHROMO-LITHOGRAPHS AND NUMEROUS ILLUSTRATIONS

SECOND EDITION, REVISED

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TO

MY COLLEAGUES OF THE MEDICAL PROFESSION

WHO HAVE AIDED AND ENCOURAGED MY EFFORTS

TO ADVANCE THE SCIENCE AND ELEVATE THE PRACTICE OF

RECTAL SURGERY,

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PREFACE TO SECOND EDITION.

It has been very gratifying to the author to know that the first edition of his book was exhausted in so short a time. It has also been a great pleasure to him to receive so many letters of commendation for his work. The revision for a *second edition* is made necessary in order to embrace many new views in rectal practice from the pens of others who are engaged in this work. The author feels especially pleased that the chapter on Disease in the Sigmoid Flexure, which was new to rectal works, elicited such favorable comment, as he takes it as evidencing success in the plan of treatment proposed by him.

Louisville, Ky., *January, 1896.*

DIFFERENTIAL DIAGNOSIS OF DISEASES OF THE RECTUM.

(After the manner of similar tables arranged by Dr. Townsend Porter.)

These tables were arranged by Paul Kempf, M. D., being based on Prof. Mathews's lectures on Diseases of the Rectum and Anus, delivered to the Kentucky School of Medicine, session of 1891.

	Fistulæ: 1. External and complete; 2. Blind—internal.	Rectal Abscess: 1. Acute; 2. Chronic.	External Hæmorrhoids: 1. Skin enlargements; 2. Venous tumors.	Internal Hæmorrhoids: 1. Large; 2. Small. Hæmorrhagic, Non-hæmorrhagic.	Prolapse.	Polypi.	Pruritus.
Ætiology.	More frequent in men. Causes trauma principally. Hard substances swallowed. Injuries, as by kicking, falling, etc.; vitiated condition of blood. Results from abscess.	Pus is caused by a micro-organism; an abscess is a cavity filled with pus. A cold abscess does not contain pus proper, but *débris* of tissue.	Tags of skin may inflame and enlarge from any of the common causes of inflammation, such as friction, cold, or excited by diarrhœa, dysentery, excessive venery, alcohol, smoking, straining at stool, obstructed portal circulation, etc.; venous clot.	Internal piles, best known as large or small, hæmorrhagic or non-hæmorrhagic. The small bleeding one is called capillary. The large ones seldom bleed, and are called venous and arterial. All varieties are found just within sphincter, seldom, if ever, high up. Simple varicosities are not piles.	A very uncommon affection; most frequent in children, thread-worms, etc. No curve to sacrum the cause.	Also an uncommon affection. Is a tumor attached to pedicle. Cause unknown.	Affection of terminal branches of nerves. Discharges aggravate. Excesses favor its existence.
Pain.	Acute, with rapid abscesses. Little with fistula proper, unless opening engages the sphincter muscle or the sinus fills with pus, caused by closure of the opening.	Sharp and lancinating in acute abscess; in cold, may not be any pain, sense of discomfort only.	External piles excite more pain than internal, because close to and involve the sphincter.	Pain if inflamed or complicated.	Very little pain, unless strangulated.	Some pain at protrusion; easily replaced.	A burning sensation.
Discharge.	Thin and watery as a rule, but occasionally pure pus; sometimes bloody. When internal opening or complete, discharge on, or with fæces.	Thick pus from acute abscess; thin and watery from cold.	Generally none. If mucous surface is broken, a little blood and mucus may escape.	Bleed in their incipiency; afterward, only escape of mucus.	Mucus sometimes tinged with blood.	Mucus, sometimes blood.	Some forms are eczematous; then weeping.
Constipation or Diarrhœa.		Constipation, because of fear of pain when bowels move.	They may excite either constipation or diarrhœa.	Constipation or diarrhœa.	Generally diarrhœa.	Diarrhœa more common than constipation.	Little to do with action of bowel.

	Fistulæ: 1. External and complete; 2. Blind—internal.	Rectal Abscess: 1. Acute; 2. Chronic.	External Hæmorrhoids: 1. Skin enlargements; 2. Venous tumors.	Internal Hæmorrhoids: 1. Large; 2. Small. Hæmorrhagic, Non-hæmorrhagic.	Prolapse.	Polypi.	Pruritus.
Signs without the Bowel.	External opening may be difficult to detect. The sinus may not lead to bowel, but in opposite direction, or up the spine, or into buttock. Tract of sinus indurated; can be so traced by finger. In tuberculous condition, external opening large and skin flabby. Impossible to tell number of sinuses either by probe or finger; size of external opening no guide to amount of disease.	Swelling caused by inflammatory exudates, and later on by pus. Heat evidenced to hand in acute; pain. In cold, fluctuation easily detected.	A dark-blue tumor; sensation just at verge of anus; or tag of skin inflamed. Sometimes includes mucous membrane, and constitutes *mixed* piles. They should never be pushed inside bowel.	Look like group of strawberries. When protruded, can be easily returned. By friction, frequently return to bowel.	Surrounds anus uniformly; no distinct tumors; soft and velvety feel.	Looks like a large berry when protruded; may be hard or soft. Known from other tumors by pedicle.	Peeling of epidermis; distinct patches by scratching; scarf-skin by irritation; rough folds at anus. May extend to scrotum and buttocks.
Signs within the Bowel.	Internal opening difficult to detect, either with finger or otherwise. Best plan, look in bowel with good speculum and watch for drop of pus to escape from opening, then use probe. The usual location between the two sphincters. In tuberculous subject internal opening large and patulous.	If pointing in bowel, sense of weight and pain. Very sensitive to touch; sphincter irritable; will soon break if not lanced; latter the best.	Do not encroach on inner surface of bowel, unless mixed variety.	Even capillary variety is not located high up. Can not be detected when in bowel, with fingers, unless inflamed.	Because of loose folds, a feeling of bagging to the finger; a burning sensation to patient.	Are difficult to detect in bowel, because they elude the finger; but, when felt, easily diagnosed.	Itching often extends within anus; mucous membrane at margin red and angry.
Miscellaneous.	The so-called *pyogenic* membrane, which lines fistulous tracts, a misnomer. Pus is not a secretion. In debilitated persons and women the sphincter muscle is weak, and easily distended. Said in phthisical subjects, the hair around anus is long and silky.	Rapid pulse; high temperature, indicating constitutional disturbance. In cold abscess, may be subnormal temperature and feeble, low pulse. Sepsis may occur from hot abscess.	First symptom is pain, and patient feels tumor. Distress in walking and at stool. Patient more apt to consult you than with internal piles.	In the aged, sphincter relaxed; in youth, contracted. Loss of energy; pain in back and thighs. Patients often think they have cancer.	So infrequent that the surgeon seldom sees it in the adult. Can only be compared with piles.	In children, mother discovers suddenly, and is alarmed. In adults, taken for piles; may bleed freely if detached. Simple of cure.	Of all diseases of the rectum or anus, this is the most intractable.

	Ætiology.							Pain.		Discharge.	State of Bowels.
Irrt. Ulcer, Fissure.	Simple Stricture.	Stricture with Ulceration.	Cancer.	Rodent Ulcer.	Impaction.	Villous Tumor.	Neuralgia.	Sacro-coccygeal Arthralgia.	Proctitis.		
About equal in the two sexes. The ulcer is located above the sphincter, but within its grasp. Anything that will tear, or cause lesion. Fissure is a crack in the mucous membrane from same cause.	Probably from pressure by the womb in females; appears as an annular constriction. Trauma.	Syphilis most common cause; next, cancer, long-continued pressure, traumatism.	Ætiology same as in all cancers. Common to old age and middle life; sometimes in youth.	Of the rarest occurrence.	More common in the aged. Is caused by loss of tone in muscular coat of bowel.	Very rare.	Gnawing, teasing, and distressing pain, because it affects the nerves.	Neuralgic or rheumatic.	This is inflammation, and is caused as anywhere else.		
Pain follows defecation about 20 minutes, and lasts from 1 to 12 hours. Out of all proportion to lesion; most painful of all rectal trouble.	Very little, if any; but reflex is great.	No acute pain; feeling of heavy weight in rectum. Diarrhœa in many, but often constipation. Patient suspects cancer.	Unless fibers of sphincter are embraced, not much pain; but if so, great pain. Constant uneasiness.	Excites pain by ulceration.	Very vague; dull, heavy pressure at anus, with severe reflex pain.	Scarcely any pain.	As above described.	Pain always, and in most any position.	Pain reflected to other organs, and to back and thighs. A dull, heavy pain in rectum.		
Generally mucous discharge and a little blood; often no discharge.	Often no discharge; perhaps some mucus.	First of mucus, then mucopurulent; not much blood. Fæces hard and in lumps.	Muco-purulent, or blood with mucus.	Very little, then of blood and mucus.	Rarely ever any discharge, except when ulceration coexists.	Hæmorrhage, some mucus; but the blood most important.	None, unless ulceration or lesion.	None.	Blood and mucus, or muco-purulent.		
Constipated because afraid to go to stool on account of pain.	Constipation, and frequently treated for such.	Constipated, often diarrhœa, or both.	Diarrhœa, often incontinence.	Diarrhœa.	Often complain of diarrhœa, but are really constipated.	May excite to diarrhœa, which may be mistaken for dysentery.	May not be interfered with.	.....	Diarrhœa, which resembles dysentery.		

							Signs without the Bowels.	Signs within the Bowels.	Miscellaneous.	
Irrit. Ulcer, Fissure.	Simple Stricture.	Stricture with Ulceration.	Cancer.	Rodent Ulcer.	Impaction.	Villous Tumor.	Neuralgia.	Sacro-coccygeal Arthralgia.	Proctitis.	
A small white tumor at verge of anus, which is tag of skin swollen. On opening anus the cut, or fissure, can be often seen.	None.	None, unless the cause of fistulous tracts, when external openings can be seen. Pruritus exists because of irritating discharge.	If growth high up, no external signs; if low down, swollen and painful around anus.	None.	No special sign. Some say anus is nipple-shaped; this is rare.	Tumor may so descend as to be seen.	None.	None.	These cases require a very prolonged and careful treatment.	
If the rectum be opened with speculum, the *ulcer* can be seen red and inflamed, and on or just above the sphincter. If a fissure, it is an extension of what began at anus.	Can be felt as an annular stricture; cord like to the feel, extending all around bowel.	Not usually seen until stricture can be felt. Above and below stricture is well-defined ulceration. Hard and fibrous condition, but not nodular.	In early stages, ulceration; later, nodular to feel; later, stricture.	Large ragged ulcer on mucoid surface. Irregular and sensitive.	A hard, doughy mass can be felt just above sphincter.	The villous-like groups diagnoses it. Bleeds freely, and may or may not be attached by pedicle.	Rare, may affect at any age. The nervous and irritable often-est attacked, but the robust may be. A nerve disease.	None.		
They may be found in any circumference of the bowel, though oftenest dorsal. They create great disturbance, especially of bladder, prostate, and urethra.	Every case suffering from chronic constipation should be examined for stricture.	This is an insidious disease; begins usually as gumma, and unsuspected. The diarrhœa or constipation being the first symptom that induces patient to seek advice.	An anæmic condition, usually cachexia. Sometimes odor of cancer, sometimes not; often bleed to touch, but not usual. No particular size.	Generally breaks down, and cancer suspected.	This affection is often treated for diarrhœa or constipation. An examination with the finger will reveal it. General condition much disturbed by it. Indigestion, loss of flesh, despondent, night-sweats, etc.	From loss of blood, patient looks pale and haggard. Is taken for cancer.	This is a very unsatisfactory trouble to treat. Look after general health, together with injections of hot and cold water.	Sometimes coccyx should be removed.		

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DISEASES OF THE RECTUM, ANUS, AND SIGMOID FLEXURE.

CHAPTER I.

INTRODUCTORY.

It is a well-known fact that from time immemorial diseases of the rectum have been treated nearly exclusively by the charlatan. In the last decade or two the profession, both in this country and in Europe, has given these diseases more serious attention than heretofore. Since the first edition of this work was published many surgeons of great prominence have given special attention to these diseases in this country. A variety of new operations upon these parts have been designed, and literature of much worth has been promulgated through the medical press. The subject of diseases of the rectum, having now received the attention its importance demands, has become a distinct specialty, recognized alike by the physician and surgeon. In this connection I desire to say that without experience in the general field of medicine and surgery no one should think of making a specialty in any line. As this book is intended to be used as a text-book on the subject for medical schools as well as for the general practitioner, no foot-notes are used, and the work in the main is a recitation only of my individual experience. Clinical facts are far superior to theories, so in a word the book contains an individual opinion in each and every instance.

Rules to be observed in Examination, Diagnosis, etc.—Any one who has been in general practice, even for a short time, recognizes the fact that rectal disease is quite common. It is very

true that the vast majority of patients call any and all affections in these parts by one term only, viz., hæmorrhoids. Some authors affirm that certain of the human races are peculiarly exempt from these diseases. Van Buren mentions in his work that, having been much with the Indians in his early life, he could not recall a single instance where one of them was affected with rectal trouble. Taking this as a true statement, it would incline one to the belief that an outdoor life, exercise, and a peculiar diet tend to militate against the affection, and yet in my experience I have seen the farm lad, who observed perfectly regular habits and was devoid of all vices, exhibit this kind of trouble in the same way as his city cousin who led an irregular life, ate and drank much, and was addicted to all those excesses which are said to be conducive to these diseases. It has been intimated that those living in the extreme South are more prone to this class of disease than those living in a colder climate; but my record-book will show no such difference, notwithstanding that I am as accessible to the one as the other. We often say to patients that many of these diseases are preventable, and lay out for them a certain plan which relates to diet, exercise, habit, clothing, etc., and assure them that if it is followed there will be a certain immunity, at least from these diseases; and yet when we come to an actual observation we find that the person of sedentary habits often escapes these troubles, while the one who has pursued our advice is afflicted by them. The laboring man who lives a frugal life is as often attacked as his rich neighbor. Some authorities claim that men are more liable to certain rectal ailments than women, or *vice versa*. In my practice the difference has not been so well marked as to be worthy of notice. It is an every-day occurrence that we find ourselves telling our young lady patients that if they persist in wearing fashionable clothing, which often includes tight lacing, they will induce certain diseases, and yet we are confronted by the fact that they are as exempt from these troubles as the girl who does not lace at all. Constantly we say to those who come to us for advice in regard to constipation

that unless it is overcome it will breed rectal trouble, and yet we are cognizant of the fact that many who suffer from persistent constipation have no rectal disease at all. So in truth each one of these cases must rest upon an individual consideration and not be dealt with in a general way. It can be definitely said that of all diseases, whether medical or surgical, there is no class which yields so promptly to treatment as diseases of the rectum. Among the list are some of the most painful, distressing, and dangerous of all diseases, and yet in the majority of instances a radical cure can be promised if the patient will submit to the proper treatment. Many persons have been incapacitated for months, and often for years, from a simple affection of the rectum which when properly diagnosticated succumbs at once to treatment, and yet, strange to say, many such patients are advised by friends and often by the family physician not to have an operation performed. On the other hand, if through ignorance or bad advice these diseases are neglected, they not only become harassing in their symptoms, but perhaps endanger life. Hence the best advice to any one so afflicted is, "Consult a competent surgeon."

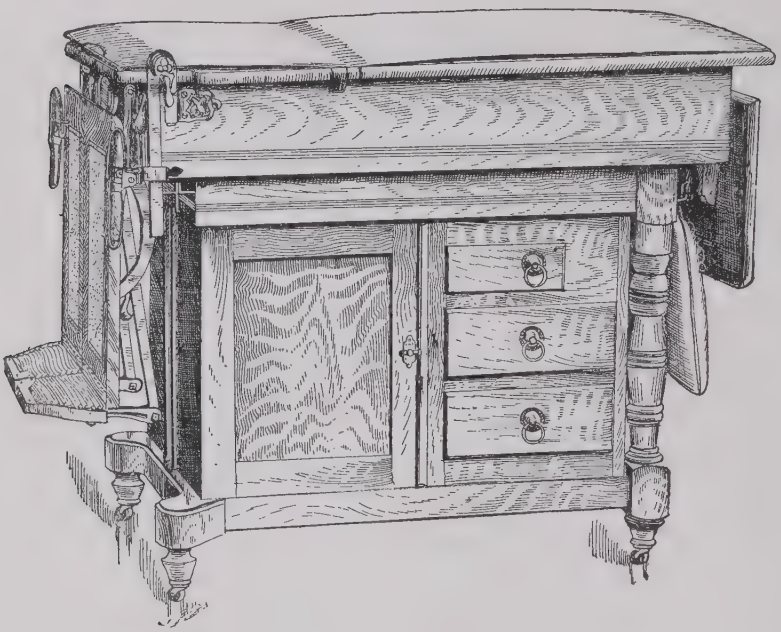
Diagnosis.—The most important thing in the line of practice of either medicine or surgery is to make a correct diagnosis of the disease. Therefore it should be urged upon patients to submit to an examination in every case where symptoms present. Indeed, without such an examination no correct opinion can be given. It would be best to let these patients go without treatment than to make a false diagnosis. Persons suffering from rectal trouble are in the habit of diagnosticating their own cases, and the physician too often falls into the habit of accepting such as the truth. Being unfamiliar with pathological conditions, it is folly to suppose they can come to a correct opinion concerning any condition affecting these parts. As has been intimated, they start out upon the wrong premise in calling all affections of the rectum hæmorrhoids, when in truth there may be any other character of trouble, even malignancy. It is far preferable to examine a

patient than to take his or her story at all. It is generally said that first of all in this line of disease you should ask the patient concerning pain. As a point in diagnosis, it would elicit information if there be protrusion of the bowel. This question means a great deal to the rectal surgeon. The answer to the same will come very near, at least, in diagnosticating hæmorrhoidal trouble, for internal hæmorrhoids that do not protrude will not often require a surgical operation. If the patient mentions protrusion of the bowel and says nothing of pain, then you can safely come to the conclusion that if there are internal hæmorrhoids they are uncomplicated, in so far as ulceration is concerned at least. When asking about the symptoms of pain it is necessary to ascertain the character of pain. First, does it exist at all times, or is it connected only with the act of defecation; and if so, is it of a lancinating character or not. Looking to the diagnosis of fissure we would ask the patient if there is an interim between the act of defecation and the coming on of pain. Then, again, it should be ascertained how long the pain lasts, and if the subsidence of it is positive. A question of great moment is that of hæmorrhage, and yet what patients say is an unsafe guide as to the real amount of blood that is lost. They often exaggerate to such an extent that the surgeon is misled by the statement. A much better plan is to have them save the discharge and allow the physician to see it and make his own estimate. It should be ascertained if the blood comes alone or is mixed with the fæcal mass. Any spurting, of course, would indicate arterial hæmorrhage. It is very unsatisfactory to question a patient concerning a mucus or pus discharge, and yet it is of the greatest significance to the surgeon. Very little stress should be put upon any answer that a patient gives as to the character of the fæcal evacuation. It is a very common thing for them to speak of having bilious discharges, when in truth it is quite difficult for the physician to tell, even by close scrutiny, if the discharge is a bilious one. Patients suffering from stricture of the rectum will often answer that free evacuations occur, so no confidence

can be placed upon any such statements. The commonest of all questions put to the patient under these circumstances is whether constipation exists or not. No one knows better than the physician that constipation is a relative term which the answers of the patients can not simplify. A few questions should be asked concerning the general health—whether any previous disease existed, as, for instance, affections of the lungs, kidneys, or *any* constitutional disorder. It should be stated, however, that the rectal disease may be of such character as regards pain, inconvenience, or hæmorrhage that an operation is absolutely necessary, whether organic disease exists or not. Many surgeons have done operations upon patients who at the same time were suffering from organic heart disease or other such complications. It is a well-recognized fact that a person can bleed to death from a small capillary pile. This being true, it would be little less than criminal for the surgeon to wait until his debilitated patient was "built up" to secure and tie the bleeding vessel. Positive advice should be given in all such cases. The subject of the reflexes is receiving very prominent and important consideration today. There is no portion of the body, anatomically considered, which has greater reflex power than the rectum. The woman patient should be questioned concerning the existence of any uterine or ovarian trouble, and where there is suspicion of such complications a gynæcologist should be consulted. But I can not agree with Mr. Allingham when he suggests that the womb trouble should be first rectified, and the rectal condition treated afterward. In a great number of instances gynæcologists have referred patients to me for rectal treatment who were suffering at the same time with some uterine trouble which did not and would not yield to treatment. It can be definitely said that neither ovarian nor uterine disease can be cured as long as the rectum is in a diseased state. For instance, we are told that a displaced uterus is one cause of hæmorrhoids, and that we must remove the cause before we look after the effect. This doctrine is so old and universal that we have learned to accept it as an axiom ;

but as there are exceptions to all rules, this should be classed as one of the exceptions. The male patient should be questioned relative to all conditions of disease from which he has suffered, whether local or constitutional. An enlarged prostate or a syphilitic exudate may cause serious trouble and occasion prominent rectal symptoms.

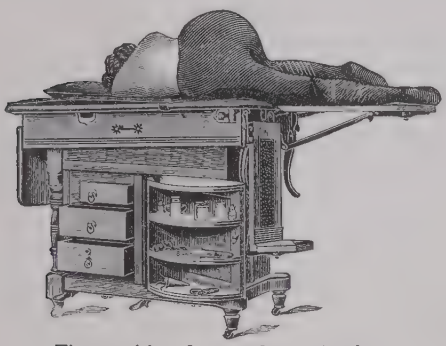
Examination.—All who are in the habit of making rectal examinations will agree that the patient's statement can not be relied on. It has happened more than once in my exam-



Allison's physicians' table.

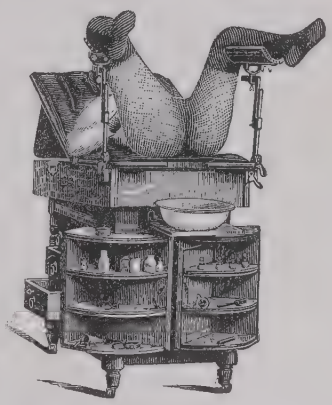
ining-room to find a case of cancer of the rectum which had been diagnosticated as hæmorrhoids. A short time ago a surgeon of some repute came to me, a distance of three thousand miles, and in detailing his case opined that he was suffering from internal hæmorrhoids. He was asked, after my examination, if he had come to this conclusion himself or had relied upon the opinion of others. He replied that he had been examined by three competent physicians. In reality this gentleman had an enlarged rectal polypus, and no hæmor-

rhoids at all. The table upon which a patient is examined is of some consideration. I use in my office an Allison table.



First position for rectal examination.

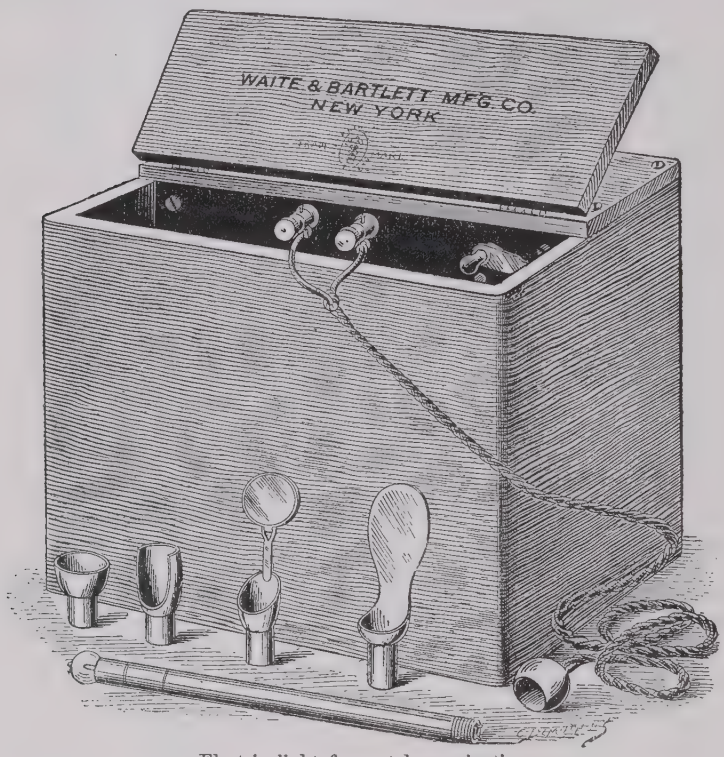
If a good natural light can be had, it is in my opinion the best. Some rectologists, however, prefer artificial light. The best of these is the small electric light which has been designed specially for examining the throat and other cavities of the body. The instrument made by the Waite & Bartlett Manufacturing Company, of 147 East Twenty-third Street, New York, is the best, in my opinion, for this purpose and the cheapest. The next thing to be considered is the position of the patient. Some prefer the one used for lithotomy, the legs being held in position by Clover's crutch. For reasons that are self-evident, there are other positions better than this--for instance, Sims's. My friend Dr. R. O. Cowling, deceased, preferred the right side for these examinations, but if both positions are tried, the advantage will be found in having the patient lie on the left side. The pelvis should be slightly elevated, which throws the contents of the abdomen toward the diaphragm. A sheet to cover the female patient should never be forgotten.



Dorsal crutch position for rectal examination.

In examining this class of patients, Dr. Horatio R. Storer, of Boston, recommends eversion by the fingers passed into the vagina. It will be of no avail in the young and unmarried, and even in those women who have borne children it is a very difficult thing to do. Of course, it is only the anterior

wall of the rectum, and that very low down, that you will be enabled to handle; and granting that you could see it, it would amount to very little in a diagnostic way. The patient



Electric light for rectal examination.

then being in the proper position, what are we to use in making an examination? First of all, we are to detect any abnormal condition by ocular inspection. Such things as external piles, eczemas, external ulcerations, condylomata, fissures, external opening of fistulæ, tracts of sinuses, marginal abscesses, can be seen without the use of any instruments. Whatever may be the condition found externally, the search should not be ended until a thorough examination has been made of the rectum proper. Granting that you might have one or all of the conditions that have been named, there might be more on the inside. I have known surgeons to form an opinion of fistulæ in a patient by such inspection,

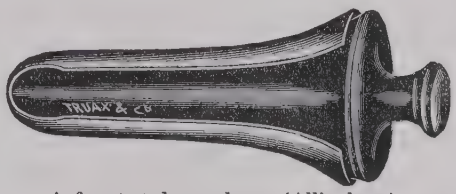
operate for the same, and leave a close stricture above. If, then, you have come to a conclusion regarding the external parts, you are now to examine for any disease *within* the rectum. By far your greatest aid will be the finger. The majority of the diseases which affect the rectum can be made out by the educated finger. It is very seldom, in these plain cases, that it is necessary to use a speculum. By proper care, the introduction of the finger and the manipulation of the rectum with it cause very little if any pain, unless there be a serious trouble existing. The finger should be thoroughly anointed with a tenacious grease; none of the oils meet the indications so well as common lard or vaseline. Then, by practicing a boring motion, and directing the finger slightly forward, it will gradually and slowly relax the sphincters and pass into the rectum; and here a definite idea can be had of the external sphincter muscle—whether or not an undue spasm exists, or whether it is hypertrophied, or whether much pain is excited by the introduction. Having the finger well into the rectum, you are now to try to detect any abnormal condition. If you have been led to believe that you can detect an ordinary case of internal hæmorrhoids by means of the finger, you will certainly be mistaken. Unless the tumors are enlarged and indurated by the inflammatory process, or have undergone atrophic change from age, they can not be detected by the finger in the rectum. The question now arises, What *can* we detect? First of all, stricture of the gut. The pouch of the rectum is naturally large and capacious, and ordinarily the finger can be swept around it. But when the pathological changes have taken place which constitute a stricture, the finger at once detects it. Impacted fæces and foreign bodies can be detected; a polypus hanging by its stem, or even with a close base, may be found by searching for it. It must be remembered, however, that the pedicle may be attached high up, and that the body of a polypus proper may be pushed above it, even into the sigmoid flexure. Therefore the patient should be asked to "strain down," and the descent of the tumor may be noticed.

Any ulcers of long standing, particularly those with a hardened base and indurated edges, can be easily detected. All malignant trouble can be made out, but I doubt the ability to detect, as is so often said we can, the opening of internal fistulæ. One trouble is that they are sought for too high up. They are usually found in the depression between the external and internal sphincter muscles; but, admitting their existence, it is very difficult to tell it by anything evidenced to the finger. While the finger is in the rectum of the male, examine the prostate gland. It is said by some authorities that it is difficult to make it out when in its normal condition. It is the rarest exception that the practiced finger can not only detect it, but also can make out its different lobes. If pressure upon it elicits pain, and you have failed to find any rectal trouble, you have sounded a key-note which will perhaps enable you to trace the symptoms to the proper part. The prostate has been frequently mistaken for a rectal tumor. Patients have been sent to me to have it removed, under the supposition that it was the beginning of some malignant rectal trouble. A case is reported by some authority where the prostate was once ligated for an internal hæmorrhoid. If the finger is in the rectum of the female, the position of the womb should be carefully noted. Upon divers occasions has this organ been mistaken for a tumor in the rectum. For the relief of such a tumor, of course, hysterectomy is the proper operation; and if the organ is not diseased, we will let the gynæcologist take the blame. It has been questioned whether by the finger we can reach *into* the sigmoid flexure. I am satisfied that, if the patient be a short female, and is directed to "strain down," and the elbow of the surgeon is pushed by an attendant, the end of the finger can be passed into the flexure.

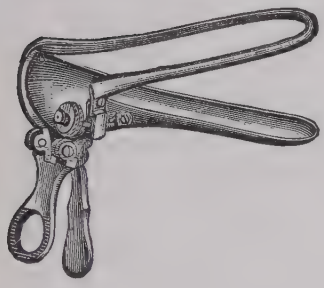
The first instrument to be considered in making a rectal examination is the speculum. The great number got up for the purpose is very much like, in usefulness, the number of pessaries that have been invented, equally of no account. The chief fault has been that after they are introduced we

see more metal than we do bowel. Consequently, the majority of speculums that are used for this purpose are of little avail. To overcome the fault mentioned, I devised the one

Speculum open at side.



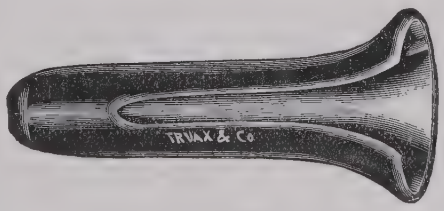
A fenestrated speculum. (Allingham.)



Kelsey's rectal speculum.

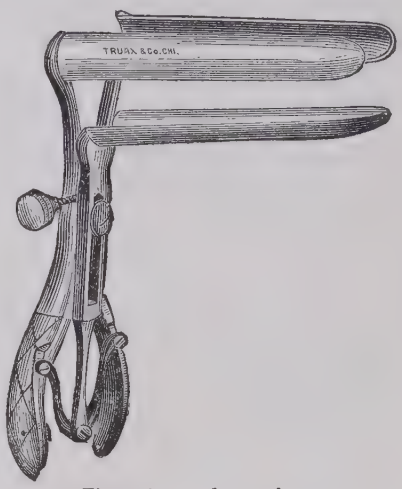
Cook's tubular speculum.

represented by the cut. It is easy of introduction, and reveals a great deal of the gut. A cut is also given of Dr. Kelsey's speculum, which he says is of great advantage in his hands. I have never had the pleasure of seeing the instrument. These are all bladed speculums and are used for detecting trouble within five inches of the external sphincter muscle; beyond that distance they will reveal but little. To meet this want, Dr. Cook has designed a tubular speculum, of different sizes, which is introduced upon a guide, and after its introduction the guide is removed. I have had much satisfaction from its use. For suspected trouble higher up than the bladed speculum will reach, I am in the habit of taking a long gutta-



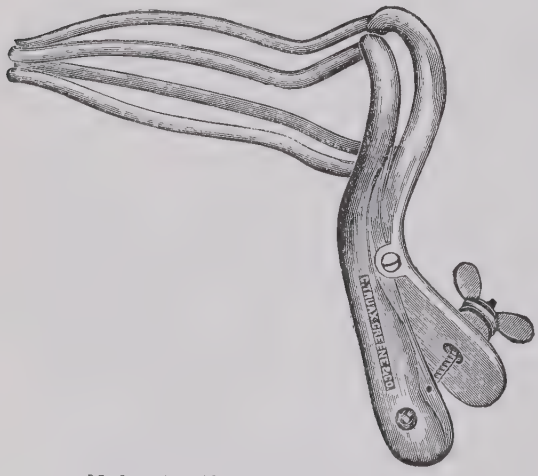
A fenestrated speculum. (Green.)

percha, tubular speculum, and passing a No. 10 Wales rectal bougie through it as a guide, and, when well into the rectum, withdrawing the bougie. Through this, as well as through the other speculum spoken of, the small electric light can be passed, and a nice observation be had of the gut proper.



Tieman's rectal speculum.

It is best that the room should be darkened while using this light. By the use of speculæ many diseases of the rectum can be diagnosticated. Among the list I might mention ulceration of the bowel, malignant or syphilitic disease, and especially would I call to mind that in many cases where vague symptoms are manifest the epithelium may be peeled off, either for a considerable space or at a small point. I have detected such spots by a careful examination with a long, tubular speculum, and by the local application I have stopped the symptoms. Hæmorrhoids, especially those well formed, can be seen with a valve speculum. A general proctitis can be seen by its use. Next in the list of instruments I should mention the probe, but I do not believe that it is of as great im-



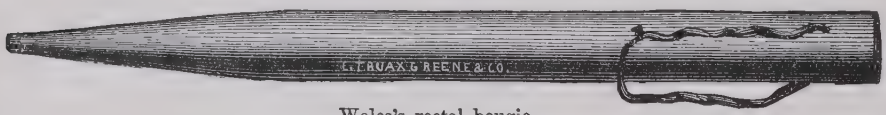
Mathews's self-retaining rectal speculum.

portance as some seem to think. We can *see* an external opening of a fistula, and we can *feel* its channel. If it is urged that we are to use a probe to detect any additional channels, I would answer that the knowledge would aid us very little in the treatment of a disease. It is the operation that cures, and whether there be one or half a dozen sinuses, they will all be attended to at the time of operating. If the sinus can be felt and no external opening detected, it is safe to conclude that the skin has closed over it. Then, by the aid of a probe, especially its sharp point, we can thrust it

Cook's rectal speculum.

through the skin and open the channel, which is the proper thing to do in all such cases. For internal fistulæ it is of greater utility; for what appears *not* to be an internal opening is sometimes demonstrated by the probe to be one. Therefore, it is an aid in making such a diagnosis. The next instrument I wish to mention only to condemn. With all deference to such authorities as Allingham, Kelsey, Ball, and others, who place great stress upon their use, I must differ from them in a positive manner. I allude to the use of rectal bougies. Formerly, the old English bougie, made of a

very hard material, was the only one used. I am certain that it has done much mischief. I remember once in my own practice, after having operated upon a man for a cancerous stricture, and wishing to keep this dilated as well as possible, I introduced one of these rectal bougies. Within a few hours the man complained of intense pain; rapid peritonitis set in, and the patient died. I am satisfied that the bougie entered the peritoneal cavity. The consolation was that the upper rectum was embraced by the cancer, and that that accounted for his death. Latterly, I have used the Wales rectal bougie, which is made of soft rubber, having a hole through its interior. If any are to be used, these are decidedly the best. They are said to be of service in detecting a stricture located above the reach of the finger. First, it would be a doubtful diagnosis made out by such means. It is a very difficult thing to pass these instruments *without* detecting an obstruc-



Wales's rectal bougie.

tion; and if we use indiscriminately the bougies for such detection, we would have a wonderful number of strictures to contend with. Fortunately, the bougie is made so that a stream of water can be passed through it. By this means it sometimes will follow its own course; but when we consider, first, that few are experts in its use, and, second, that it is a dangerous instrument, remembering that the upper part of the rectum is movable gut, the dangers that are incident to its use outweigh by far any good that can come by detecting a stricture in that locality.

The Rectal Sound.—A number of authors recommend rectal sounds for the purpose of detecting stricture beyond the reach of the finger. The same objection can be urged to their use as to the rectal bougie, with the addition that they are *more* dangerous, in that they are made usually of a hard material. It would take the services of an adept to insert one

of these into the sigmoid flexure, even if a stricture did not exist; and if one did exist, it would be a very difficult thing to tell it. Then, again, presuming that we suspect a diseased condition, it can be readily understood that the point of this rectal sound, which is usually cone-shaped, could be thrust into the peritoneal cavity.

The Hand.—In 1872 Prof. Simon, of Heidelberg, published an article entitled The Artificial Dilatation of the Anus and Rectum, for Exploration and Operation, in which he first described a method of exploring the lower bowel by the introduction of the entire hand. By this method of examination he asserted that he was not only able to explore all the pelvic organs and to distinguish all pathological changes that might have taken place, but that the greater part of the abdominal cavity could also be reached. He further asserted that this method was so entirely free from danger that he had not hesitated to practice it on patients anæsthetized for other purposes. He limited the depth to which the hand should penetrate to the upper part of the rectum and the lower part of the sigmoid flexure, and claimed only to palpate the abdomen somewhat above the umbilicus. Since that time some have asserted that the hand could be made to enter the descending colon. Dandridge, in an article on the manual exploration of the rectum, in the Reference Handbook of the Medical Sciences, says, in answer to this assertion, that it can be shown on the cadaver to be a physical impossibility. Many others who have written on the subject modify the conclusions reached by Simon.

Many accidents have followed an attempted introduction of the hand into the rectum, and no one who is acquainted with the anatomy of the parts will deny that, in disease especially, it is a dangerous procedure, and that the operation should be limited to very exceptional cases. Even if a penetration of the cavity does not take place, in many instances incontinence of fæces would result. However, this is the least of all the accidents, the main one being the rupture of the peritoneal coat. And yet, with all these dangers threat-

ening us, I believe that the procedure is warranted in some cases.

A Case.—I was called a short while ago, in consultation with Drs. Roberts and Grant, of this city, to see a man who was suffering from total obstruction of the bowel. From the history of the case they had ruled out acute obstruction, but they were unable to locate the *point* of obstruction. Incidentally I would remark that it is a very difficult thing to define or circumscribe a tumor in the sigmoid flexure, especially if the abdomen is large or contains much fat. Many claim to do this, but it is in the rarest of cases that it can be accomplished. Many times I have tried to find malignant trouble of the sigmoid flexure by palpation, but in only one case was the plan successful, although the after-history proved that it existed. Too much stress, in my opinion, is placed upon this method of examination, and we should seek for further and better means. Granting that there *was* malignant trouble in the upper rectum or in the sigmoid, it is a dangerous manœuvre to introduce a bougie or sound into it. Therefore we are forced to think of other measures. In many cases the cancer is confined to the sigmoid, and the rectum proper is not affected. This patient referred to was a man about forty-five years of age and in a robust condition. His weight would have exceeded two hundred pounds; consequently, the abdomen, being tympanitic, was enormously distended. The attending surgeons had failed to locate the point of obstruction, although it was total. The administration of chloroform was suggested, and the hand introduced for the purpose of making a diagnosis. This was agreed to. The hand being well annointed with vaseline, two fingers were first introduced through the sphincter, then four, and finally the thumb and whole hand. This was done by a rotatory motion. I felt the sphincter muscle plainly give way. Pushing up my two fingers to the entrance of the sigmoid, a well-formed cancerous growth was detected, into which I could scarcely insert one of my fingers, but all of them could sweep around the tumor. It could be plainly seen that

the correct diagnosis was a malignant tumor of the sigmoid flexure. An immediate laparotomy was advised, which was done. Where, by the ordinary means, a correct diagnosis can not be arrived at, we are justified in introducing the hand for this purpose, but it should be remembered that the *size* of the hand must be considered. Simon says that a hand measuring twenty-five centimetres (nearly ten inches) in circumference may be introduced absolutely without harm. Of course, he means in a normal condition of the gut. My hand measures eight and a fourth inches in its widest circumference; no difficulty is experienced in introducing it into the rectum. A number of years ago I reported to the Kentucky State Medical Society a case where I introduced my hand and arm into the rectum, and broke down a stricture at the entrance of the sigmoid flexure. Dr. O. E. Herrick, of Grand Rapids, Mich., says, in an article on rectal explorations, published in Leonard's Illustrated Medical Journal, of October, 1880, that he has had occasion to test repeatedly the method which, as he says, consists of passing the hand up the rectum along the curvature of the sacrum and up through the pelvis, where the hand could pass in any direction, and all the organs, not only in the pelvis, but also in the abdominal cavity, can be got at by this method. He reports a number of cases, and says that the discovery has proved a valuable one to him, and thus far there have been no unpleasant results following the operation. This does not coincide with the statement of Danbridge, but I am much inclined to believe with Dandridge in his limits of the method, and that beyond said limits it is a physical impossibility to do what is claimed. It is a dangerous procedure, and should be resorted to only in exceptional cases. I am never in the habit of giving the patient an anæsthetic for an instrumental exploration of the rectum, but when it comes to the introduction of the hand it is of the greatest necessity, and it could not be done without the use of ether or chloroform.

Rectal Examination in Relation to Life Insurance.—There is one class of patients especially that indicates to us the necessity

of a rectal examination, not so much for their benefit as for that of the life insurance company about to assume the risk. The importance of a thorough examination of all applicants for life insurance is well known and can not be overestimated. So well recognized is this, that all life companies aim to secure the services of competent physicians as examiners. Yet none know so well as themselves that many are received who should not be. Whether this is due to incompetency on the part of the examiner or to gross neglect, we will not stop to argue; but, be this as it may, it is certain that injustice is done the membership or company each time that an applicant is passed by the examiner who is below the physical standard. So careful is the State of its citizens' welfare, that laws looking to their protection are enacted, and each company seeking to do business in any State must conform to these laws, or be prohibited from doing business within its borders. In keeping with this, each reputable company seeks to protect those already insured from any imposition; hence a long list of questions, looking to the confirmation of good health and a sound family history, is asked, and the applicant is required to undergo a rigid physical examination. If he stands the test, he is accepted; if he does not, he is rejected. The reason for rejection is sometimes based upon that which the longevity of the applicant afterward proves to have been a mistake; as, for instance, the height of the individual must be in proportion to a certain measurement of the chest and abdomen or to the weight of the body. Again, if an applicant shows a family history of tubercular trouble, he is liable to be rejected; or, if he has already a lung deposit, he is certain not to be recommended, notwithstanding the fact that many persons whose parents, one or both, have died with phthisis, have themselves escaped the disease altogether, and it is a well-known fact also that phthisical patients have been cured. I do not cite these instances to condemn the action of the companies, but it must be conceded that the applicant must be protected in his rights equally with the company. If he be rejected, either through the incompetency of his medi-

cal examiner or through the fault of the company's rulings, he is forever barred from acceptance in other companies. The responsibility of the medical examiner for life insurance is a very grave one. The comfort, happiness, and even the lives of many may rest upon his decision. Each and all of us are more or less interested in this subject, and the belief that the rectal surgeon can settle some points that are generally overlooked by a life company and its examiners forms my excuse for mentioning this subject here. It was impressed upon me years ago that sufficient investigation was not given to the rectum in forming an estimate of the longevity of the applicant. In relation to this subject I desire to submit four propositions: 1. That there are diseases affecting this portion of the body which are wholly unrecognizable save by a careful exploration of the rectum. 2. That when syphilis, cancer, or tuberculosis attacks the rectum, they are generally attended with fatal results. 3. The interim between their incipiency and development is so vaguely marked that nothing less than a full exploration will reveal their nature. 4. That if, during this interim, the person were to apply for life insurance, he would be accepted, other things being equal.

That trouble which is often fatal is manifest first in the rectum can not be denied. Under this head can be placed cancer and tubercular disease, and I have frequently called attention to the fact that syphilis may develop in the rectum when it has not been recognized in a secondary way in any other portion of the body. To elucidate my meaning contained in the four propositions named, I have taken at random a few cases from my record-book:

Case I.—Mr. C., about forty-five years old, came to me, at the suggestion of his physician, for an examination of his rectum. He remarked that his doctor was not sure that he had rectal disease, nor was he; yet, because of the fact that he strained at stool and passed a little blood and mucus, he thought it best to be examined. Placing him in Sims's position on a hard table and in a good light, I carefully searched the rectum with a speculum, but could find no disease. Re-

moving the instrument, I inserted my finger, and asked the patient to strain down, when I was enabled to explore the gut for five or six inches. At the end of my finger an indurated spot was discovered, which seemed to extend upward. Reasoning by exclusion, I could not imagine any other disease which could cause this hard, nodular, little tumor, located at this spot. Although there was no gland involvement, I was firmly of the opinion that this man had incipient cancer. He was given treatment by injections, etc., and in a few days the symptoms cleared up and there was no discharge of either blood or mucus, and no straining at stool. After this he took a long journey of about fifteen hundred miles, and upon his return he called at my office to say that he had entirely recovered. He had a rest from all bad symptoms for a month or six weeks. During this interim he applied for a life policy of ten thousand dollars, passed the examination (no attention being paid to his rectum), and was insured. After a while his condition grew worse; a discharge of blood and mucus was noticed; he began to emaciate; took on a bad color; and in less than six months perforation took place, and he died—of cancer.

Case II.—Mollie T., unmarried, about twenty-eight years of age, of easy virtue, gave a history of primary syphilis, though no evidence of a secondary manifestation of the disease. Having money, she was not subjected to the exposures, etc., that are incident to such a life. She came to me to be treated for constipation. Upon examining her, I detected, about three inches above the external muscle, a close stricture. I advised her to have it divided. She said she would consent to any treatment but this; consequently gradual dilatation was practiced, until a No. 8 Wales bougie could be passed through it. After this she failed to report to me for a number of months. When I saw her again, the stricture was as close as when first examined. It should be mentioned that after the two dilatations a large mass of fæcal accumulation passed away, aided by the syringe. After the second course of treatment she again disappeared for months,

after which she dropped into my office one day to say that she was not doing well, and thought she would have the stricture divided. She was warned, as I had often done before, that, if she did not attend to it, she might die in consequence of the neglect. Although she said she believed this, she did not report, but I learned a few days after seeing her that she had started on a long journey. A telegram was received on the morning of the third day after her departure, saying that she had died suddenly. Her physician wrote me that her death was evidently caused by a perforation into the peritoneal cavity; and, she having time to tell him of her stricture, he added in his note that the perforation was likely caused by fæcal impaction above the stricture, or an extension of her disease—in which opinion I fully concur.

Case III.—A gentleman, aged thirty, consulted me for constipation. His history was much like that of many who suffer from this trouble. He said he had taken purgatives, in all forms and doses, until they had lost their effect. A close examination of his rectum developed the fact that a stricture existed at the entrance of the sigmoid flexure. He was put under chloroform and the stricture dilated by the aid of the hand pushed into the rectum. He has since died of his trouble. If this man had applied for life insurance in any company, even up to the very date that he first saw me, giving the same symptoms as were given me, viz., only those of constipation, he would have been accepted, and yet his death was caused from a condition that could be detected only by a rigid search into the rectum as high as the sigmoid flexure.

Case IV.—Dr. B. asked me to see with him a young married woman who was strangely affected. He said that she had been constipated for a long time, but was now unable to pass an action at all. An examination of the rectum revealed a stricture about an inch and a half above the external sphincter muscle, which would not admit of the passage of a lead-pencil. This woman, to all appearances, was in perfect health, about twenty-two years of age, weighing

one hundred and forty pounds, of medium height, of florid complexion, good appetite, and cheerful spirits. Certainly, she would have been admitted into any life company that received women. The doctor gave her an anæsthetic and I did a free proctotomy upon her. Since then I have divided this strictured condition twice, at intervals of one and two years. The trouble, however, will likely be the cause of her death.

Case V.—A young man, aged twenty-five, was brought to me by Dr. G., complaining of a frequent disposition to go to stool, and at such times passing only mucus and blood. With the finger I easily detected a hard, nodular infiltration into the gut, which extended up it for four or five inches, too high to be excised. My diagnosis was cancer. Under the injection plan, his symptoms grew better, the discharge ceasing for a time. For months thereafter he appeared in good health, not losing a pound of flesh, and eating and sleeping well. After a while his symptoms reappeared, the deposit in the mucous and submucous tissues gradually extended, strictures formed, glandular involvement took place, there were loss of flesh, bad color, etc., and the man eventually died of cancer.

Case VI.—A lady, married, mother of six children, aunt of the last patient, came to my office to consult me for piles and some constipation. Apparently, she was in good health. She said she had been advised a good while before to consult me, but was prejudiced against me for the reason that I had treated her nephew so long without benefit. An examination of her case showed the existence of two strictures of small caliber, located two and three inches, respectively, above the sphincter muscle. It was a singular coincidence that an aunt should object to me because I did not cure her nephew of cancer, and that, in making my examination of her, when she complained only of piles, I should find that she also had cancer. I stated to her that her condition was more serious than she apprehended, and to her husband I explained her condition. I did a proctotomy on her, opening up the strictures thoroughly, gave good drainage to the

wound, and for a while she did well, but eventually went from bad to worse, and died.

CASE VII.—Mrs. P., the wife of a doctor, accompanied by her brother-in-law, who was also a doctor, came to me to be examined for some trivial rectal trouble. I found a scirrhus cancer blocking the entire rectum. She died in about eight months.

These cases will suffice to illustrate my points.

Summary.—The first case verifies all four of the propositions laid down. First, the disease could not have been recognized except by a thorough exploration of the rectum. Second, it proved to be both serious and fatal. Third, in the interim between its incipience and full development, the patient applied for and secured a life policy, and the company suffered a loss of ten thousand dollars. This man suffered sufficient symptoms at least to have called for some examination of his rectum, and this is the point that I wish specially to make, that the examiner for life insurance should question the patient thoroughly as to any rectal manifestation of disease, and that the patient's diagnosis of piles, etc., should not be taken; but, if any obscure symptoms exist by reflex or in other ways, the rectum should be examined.

Case II substantiates the proposition as well, except that no application for life insurance was made. It might be said that in this case a history of syphilis was given, and for this reason the person would have been rejected. In answer, I would say that in many cases of syphilis the only local manifestations are found in the rectum; therefore they might escape the detection of the examiner, and a false opinion be formed. Then, too, the fact that a person has once had a local sore is not *prima facie* evidence of syphilis. Again, it is not necessary that stricture of the rectum should result from either cancer or syphilis, as is evidenced in two of the other cases where the cause was benign. Cases V and VI demonstrate that malignant trouble may exist in the rectum and give but little intimation of its existence. During the time of its latency, if the person so affected should apply for life

insurance, the chances are that he would be accepted. In each and every instance, I believe that a careful rectal exploration would reveal the true nature of the disease, and its detection would save the company the amount of the policy. Whereas, no life company, to my knowledge, requires a rectal exploration of the applicant, still it expects of its medical examiner to trace out all forms of disease which would prevent the taking of the risk. I do not wish to be understood as saying that all applicants for life insurance should have a rectal examination before they are passed, but I do say that these three forms of fatal diseases—cancer, syphilis, and tuberculosis—when appearing in the rectum, are so masked in their symptoms that nothing less than a physical exploration of the rectum will reveal the nature of the disease.

CHAPTER II.

ANATOMY OF THE RECTUM.

It is a very essential thing, in examining and manipulating the rectum, and in doing surgical operations upon this part, to know its anatomy. Hence I have taken occasion to say that it is a bad practice for teachers to advise the free use of long instruments in making examinations of the gut. When we remember that a large portion of the rectum is not attached, but is a movable, floating membrane, we can easily understand how such an instrument could be pushed into the peritoneal cavity, with but little force, especially when the parts are in a diseased condition. Again, as has been intimated, death may follow the introduction of the hand into the rectum, and a forcible divulsion of a stricture, under certain conditions, may be fatal. The rectum, then, should be studied both in its anatomical and pathological aspects. We have spoken of the intimate relationship that the rectum bears to the other organs, by contiguity and continuity. It is important to know these relations in order to understand and to trace the many reflex symptoms that are met with in the diseased or altered conditions.

The rectum begins at the sigmoid flexure and ends at the anus. Its length has been variously estimated. Some say that it measures from six to eight inches when in position, there being a gain of an inch or two when it is dissected out and laid flat. Bodenhamer claims that he has frequently seen specimens which measured eleven inches. I think that the height of the individual usually controls the length of the part. A person measuring six feet will have a longer rectum than one measuring five and one half feet. This, at least, is

the best guide in forming an opinion as to how far an instrument must be inserted before it reaches the sigmoid flexure. I am satisfied that in some short women the rectum is not longer than five inches.

For convenience of description, and to get a good anatomical bearing, it is best to divide the rectum into three parts: the first part, four inches; second part, three inches; third part, one and one half inches. For the location of disease and anatomical bearings this is best. For the dangers to be apprehended from manipulation it is best to say that one half of the rectum is in a fixed condition, and the other half is floating, or not fixed. Now, this arrangement seems to have been fixed by Nature according to the true principles of mechanics, viz., "A pipe upon the end of a flexible hose facilitates the discharge." It should also be remembered that the serous coat of the rectum is from the peritonæum and invests the first part entirely, and that the *meso-rectum* dips in front of the second part. Therefore the rectum is not a straight tube, but has its boundaries and curves, surrounded by danger-signals, all of which should be remembered in passing instruments, either for the purpose of making a diagnosis or of operating upon the parts.

Shape and Relations.—The rectum is club-shaped, narrow above, with a pouch below. Immediately above the sphincter muscles the dilatation is noticed. I would call attention to the fact that there is a great difference in this pouch in certain individuals, which does not accord with accepted teachings. O'Beirne taught that in a normal condition, when the pouch was empty, the folds were in apposition, the same as in the pharynx, when not distended by a bolus of food. Others give certain measurements which are said to be accurate. As a rule, I believe that in the majority of cases O'Beirne's idea is correct, but it is to any definite or positive rule that I wish to object. There is a certain condition sometimes observed in these examinations that is supposed to be caused by disease, which I am sure is often only natural, and has no significance in determining disease. I allude to

the large, capacious, and empty pouch of the rectum. It feels as if the finger had entered a great cavity, and sometimes it is difficult to touch the sides. I have known medical men to be confused upon meeting with such cases, and very many good surgeons say that it affords an evidence, nearly pathognomonic, that a stricture or obstruction exists above. I must confess that at one time I held to this view, but by a careful watching of these patients it was observed that it was not true—the condition was a natural, not an abnormal one. I do not wish to convey the idea that no stress is to be put upon this state of the rectum when disease actually exists above; for I hold this one symptom of the greatest value in making out a stricture at the entrance of the sigmoid flexure, or an obstruction in it, but, to be satisfied of it, I would want more clinical facts than the simple existence of this very free dilatation of the pouch.

Relations.—First part: *Behind*, with the pyriformis muscle, sacral plexus, branches of the internal iliac, which separate it from the same; iliac symphysis. Second part: *Behind*, close to the concavity of the sacrum. Third part: The anal muscles.

First part: *In front*, the convolutions of the intestines separate it from the bladder in males and the uterus in females. Second part: In *front*, with the triangular portion of the base of the bladder; vesiculæ seminales; more anteriorly with the prostate in males, and in the female it adheres to the vagina. Third part: In *front*, in the male it is separated by the perinæum from the membranous portion and the bulb of the urethra.

Surgical Importance.—1. Communion with vesical, uterine, urethral, and vaginal troubles. Not only are rectal disturbances frequently the result of each and any of these, but, *vice versa*, all contiguous organs suffer whenever the rectum is diseased. 2. The dilatability of the female rectum. If for any reason it is thought best to introduce the hand into the rectum, it is fortunate for both the patient and the surgeon if the subject be a female. 3. These truths remembered, dilata-

tion or division of stricture can be accomplished when located in the fixed portion, but any attempt to do so with the upper portion is extremely hazardous. 4. It can be seen that operations upon the bladder can be done through the *trigone vesicale*, as the second part only is covered above by the peritonæum. The space extends three or four inches above the anus. It has been a subject for discussion, viz., what is the average distance from the anus to the point where the serous coat leaves the wall of the rectum? Quain says four inches; Allingham, from two to five; and Cripps, after much experimenting, concludes that the average measurement is two and one half inches when the bladder and rectum are both empty, and an additional inch when distended. It is of the greatest importance to settle definitely, if we can, this question, as the safety of the patient's life may depend upon it; yet I must confess that it is a difficult thing to do. A thorough study of the individual case would go further in determining this point than any general rule.

Muscular Coat.—The muscular coat resembles the balance of the intestinal tract in having an external longitudinal and an internal circular layer. There is some difference, however, in the further arrangement of the fibers. The bands disappear at the sigmoid flexure and the longitudinal fibers take their place. Dr. Garson, in a paper read before the Boston Medical Association, names the fibers at the point of contact of the rectum, bladder, and prostate *recto-vesical* fibers. It is not an inappropriate name, as these fibers form a firm band of union between the organs. The muscular fibers of this coat, in my opinion, play a decided part in constipation. If, for instance, pressure for any length of time is kept up upon them, they lose their elasticity and are unable to perform their function.

Submucous Coat.—This coat furnishes a bed for blood-vessels. It is thicker and more dilatable here than elsewhere, and because of its general make-up allows the mucous membrane to move freely upon it.

Mucous Membrane.—The mucous membrane of the rectum is

thicker and of a darker color than that of the rest of the gut. I have often been impressed with the observations of physicians who come to see this special work. "The gut is wonderfully congested," they often say, when, in fact, it was presenting a natural appearance. It is of the utmost importance for the student who expects to give any attention to diseases of the rectum to familiarize himself with the physical appearance of the parts. This coat is more vascular and more movable than that in any other part of the tract. Hence it is that when the sphincters contract it is thrown into longitudinal folds. These folds are often the means of arresting the bougie as it is pushed into the rectum. These, however, are *effaceable*, and the rectum can be seen even to its interstices with a good dilating speculum. Besides these, Mr. Houston described some *ineffaceable* folds, which have received the name of Houston's semilunar valves. That the student may have an opportunity of looking for them I will give the location where it is said they can be found: 1. Near the commencement of the rectum, on the right side. 2. On the left side, opposite the middle of the sacrum. 3. On the fore part of the rectum, opposite the base of the bladder. Here they are said to be the best defined and more constant. 4. One inch above the anus, on the back part of the rectum; but they are said to be not constant.

Their Use.—To support the fæcal mass.

I have been thus explicit, for the reason that I deny their existence, and if they did exist I would deny that their use was "to support the fæcal mass."

For many years I have searched for these folds and I have yet to encounter them. In my opinion, they existed only in the author's "mind's eye."

Pockets and Papillæ.—After the lapse of many years another great anatomical discovery (?) has been made, and it is left for the traveling peddler or itinerant to herald it, not to the profession but to the world at large. We are informed that we are liable at any time to be *attacked* by "pockets and papillæ," and that these "lesions" are fearful to behold. We

are told that "they are as common as piles and more prolific of mischief than you could possibly imagine"; that "these conditions are the most mischievous of all rectal affections," and it is advised that they be immediately cut out. Instruments of all kinds and many devices have been invented, by which a free excision of these terrible "pockets" can be made, and they are advertised for sale "at a very low price," so that they are really within the reach of everyone, be he surgeon or not. Consequently, at many of the cross-roads you will find men ready to relieve you of the dangerous and fearful malady. Now the truth is, these so-called "pockets and papillæ" are normal structures and are not pathological at all. I can not state the facts more tersely than has Dr. Edmund Andrews, the distinguished surgeon of Chicago, who says: "The sacculi Horneri are not *lesions* and usually do no harm; on the contrary they, in conjunction with adjacent grooves and concavities, hold the reserve of mucus required to lubricate the anus."

In evidence of the correctness of this position he publishes a letter from Prof. Henry N. Smith, a distinguished anatomist. Dr. Smith says: "The rectal pouches (sacculi Horneri) are *normal* structures, intended to hold mucus which is forced out in defecation, to lubricate the margin of the anus and protect it from hardened fæces."

Below are given the views of Prof. C. W. Kelly, Professor of Anatomy in the Kentucky School of Medicine, Louisville, Ky.

LOUISVILLE, KY.

Prof. J. M. MATHEWS.

DEAR SIR: The pockets found in the rectum just above the internal sphincter muscle assist in the act of defecation by receiving and retaining mucus, which keeps moist the fæcal mass, and lubricates the parts which facilitate the evacuation of the discharge.

The sacs aid the dilatation of the lower part of the rectum during the peristaltic expulsive efforts of the sigmoid flexure and colon. The papillæ found at intervals between the

pouches are constant, and both of these structures are found in health, and are consequently normal and natural to the parts. Very truly, C. W. KELLY.

Prof. J. M. Bodine, Professor of Anatomy in the Medical Department of the University of Louisville, and Prof. Dugan, Professor of Anatomy in the Hospital College of Medicine, both regard the "pockets," "papillæ," and "pouches" as normal structures.

For a number of years I have been trying, in my lectures to students and in the medical periodicals, to refute this false anatomical doctrine, and it affords me pleasure to subjoin such testimony as that of these distinguished authorities. No one knows so well of the great damage that is being done by these ignorant itinerants in cutting away the normal structures of the rectum as the surgeons who see the results of this foolish practice. Hæmorrhage, ulceration, fissures, strictures, and inflammation of the rectum frequently follow in the wake, and it may be that the surgeon profits in pocket, but the patient suffers in health. I have now under treatment a most excellent woman from the central part of the State, who submitted to the "treatment." She is really in a deplorable condition in consequence, and it will take a long time to reduce the extensive proctitis from which she is now suffering.

External Sphincter Muscle.—This muscle is one of the most important in the whole body, for the reason that it opens and closes the anus; and, if by disease or trauma its office is destroyed, the person is rendered miserable for life. Incontinence of fæces results, and no greater calamity could befall the sensitive person.

Although a little out of place in this chapter, I feel like taking the opportunity of warning those doing rectal surgery against injury to this muscle. In women, especially, who require surgical treatment of the anus or rectum, be careful, very careful in your divulsions and cuttings of the muscle. In patients, either male or female, who are disposed to a weakened condition of the muscle, you must tax your sur-

gical ingenuity to prevent any harm being done to it. This muscle is more developed and better defined than the internal sphincter. It has both voluntary and involuntary power. It is made up of a flat plane of fibers, and is closely adherent to the integument. It is elliptical in shape, and completely surrounds the anus. It is likely to become greatly hypertrophied by the inflammatory process, and, from the fact that it controls, more or less, the peristaltic action of the bowel, it is a great factor in producing constipation. The nerve-supply is from the hæmorrhoidal branch of the internal pudic and the hæmorrhoidal branch of the fourth sacral. It arises from the tip of the coccyx and is inserted into the perineal center. In making a cut for fissure or stricture, if the median line is closely hugged, the muscle will not be divided.

Internal Sphincter.—This muscle is difficult to define. It is situated immediately above the external sphincter, but is only two lines in thickness. It has not nearly the surgical importance of its neighbor. As an anatomical guide, in locating the openings of internal fistulæ, it subserves a good purpose, for they are usually between the two.

Is there a third sphincter muscle? Kelsey, in his work on Diseases of the Rectum and Anus, in discussing this subject, says: "From a study of the literature of this question, and from the results of dissections and experiments which we have personally been able to make, we are led to the following conclusions: 1. What has been so often and so differently described as a third or superior sphincter-ani muscle is, in reality, nothing more than a band of the areolar muscular fibers of the rectum. 2. This band is not constant in its situation or size, and may be found anywhere over an area of three inches in the upper part of the rectum. 3. The folds of mucous membrane (Houston's valves), which have been associated with these bands of muscular tissue, stand in no necessary relation to them, being also inconstant and varying much in size and position in different persons. 4. There is nothing in the physiology of the act of defecation, as at

present understood, or in the fact of a certain amount of continence of fæces after extirpation of the anus, which necessitates the idea of the existence of a superior sphincter. 5. When a fold of mucous membrane is found which contains muscular tissue, and is firm enough to act as a barrier to the descent of the fæces, the arrangement may fairly be considered an abnormity, and is very apt to produce the usual signs of stricture."

The only exception that I would make to any of these conclusions is to No. 2, which says, "This band is not constant in its situation or size." I would beg to amend by saying that the band in many instances is entirely absent. I quite agree with all these conclusions of Kelsey, and would relegate the third or superior sphincter-ani muscle to the company of "Houston's valves" and of the "pockets and papillæ."

Levator Ani.—This is a very important muscle, from a surgical standpoint. It takes its origin in front from the posterior surface of the body and ramus of the pubes, on the outer side of the symphysis; posteriorly, from the inner surface of the spine of the ischium; between these points from an angle of division between the obdurator and the recto-vesical layers of the pelvic fascia on their under surface. The general origin is from the under side of the true pelvis. Its insertion posteriorly is to the tip and sides of the coccyx. More anteriorly, they unite with each other to form the posterior *rhaphe*. *In the middle:* The largest portion is inserted into the sides of the rectum, blending with the fibers of the sphincter muscle. *Anterior:* The largest fibers descend on the sides of the prostate gland and unite with the fibers from the opposite side, blending with the fibers of the external sphincter and transversus perinei at the tendinous center. Inferiorly it is related by its convex surface to the sacro-sciatic ligaments and the gluteus maximus. Posteriorly it is in contact with the lower border of the pyriformis. Its action is to draw the coccyx up, or, when both muscles act together, to fix that bone and prevent its being pushed backward in

defecation. Its fibers unite with those of the opposite side beneath the neck of the bladder, the prostate, and the urethra. This muscle acts as a support to the pelvic organs. It prevents the rectum from being protruded. It also acts upon the neck of the bladder, because it incloses it, and in the act of defecation the bladder is pressed upon and the urethra closed. It is easy to be seen, then, that any abnormal condition of this muscle would reflect upon the bladder and the prostate, especially, and that many affections of them can be traced to this spasmodic action of the muscle, which is caused, of course, by some diseased condition. It can be also understood that these organs, being diseased, will reflect to these muscles, causing much of the distress which has been described in a preceding chapter. The muscle receives its nerve-supply from the fourth sacral and internal pudic.

Recto-Coccygeus.—This muscle is located directly under the levator ani, as it goes to make up the floor of the pelvis, between the tip of the coccyx and the anus. Its office is to hold the end of the rectum to a given point in defecation. If it is injured, either by disease or by trauma, it is with the greatest difficulty that the act of defecation is accomplished.

Transversus Perinei.—The main function of this muscle is to aid the act of defecation. The two muscles are sometimes continuous and form a half ring, and brace the anterior part of the rectum.

Blood-supply of the Rectum.—The rectum receives blood from three different sources. The upper part is supplied only by the superior hæmorrhoidal, a branch from the inferior mesenteric, which also supplies the lower part of the colon. The terminal branches of the superior hæmorrhoidal pass to the lower part of the rectum, but the principal blood-supply to this part comes from the middle and inferior hæmorrhoidal, which are primary and secondary branches from the internal iliac, which artery affords the principal blood-supply to all the pelvic viscera. The middle hæmorrhoidal is distributed to the pouch of the rectum, while the inferior, a branch from the internal pudic, passes across

the ischio-rectal fossa and reaches the rectum at its lower part. The internal pudic, besides giving a large supply of blood to the rectum, supplies blood to the bladder, prostate, vagina, perinæum, and external organs of generation. The veins which return the blood from the rectum are numerous. The hæmorrhoidal plexus communicates in front with the vesico-prostatic in the male, and the vaginal plexus in the female. While the inferior and middle hæmorrhoidal arteries supply the principal part of the blood to the lower part of the rectum, the corresponding veins return but a small portion of this blood ; almost all the blood from the rectum passes through the superior hæmorrhoidal veins and into the portal system.

In the chapter upon the anatomy of the rectum in relation to the reflexes, we have given the nerve-supply of these parts.

CHAPTER III.

CONSTIPATION.

Perhaps there is no subject of as much importance to the rectal surgeon as that of constipation. Patients suffering from this trouble drift to him after having gone the rounds with the general practitioner. It is a well-recognized fact that patients are allowed to make their own diagnosis in this affection, and that the physician drops into error by prescribing accordingly. We must also recognize that constipation is a relative term. Whatever we may teach and believe in regard to its effects, the history of patients will frequently unsettle any such doctrine. To properly understand the subject, it is necessary to consider both the anatomy and the physiology of defecation. O'Beirne, of Dublin, believed that the rectum in its natural state was very like the œsophagus when it was not distended with food—in other words, that its walls were in apposition. He claimed that the rectum, in its normal state, would show the folds lying closely together, and that they were only distended, or effaced, during the time that the pouch was filled with fæcal matter. According to his views, when a peristaltic action of the bowel proper occurred, the fæces would pass from the cæcum, through the colon, and thence fall into the rectum. If this call of Nature is heeded, a natural evacuation takes place; if it is not, an anti-peristaltic motion occurs, which lifts the mass back into the sigmoid flexure. Now, we must remember that the evacuation is composed partly of solid material but mostly of water. If the discharge is according to health rules, it passes as Nature intends; but if there is a refusal of the same on the part of the

person, or from some physiological reason, then the water is reabsorbed and passes into the circulation, while the solid material is lifted back and remains in the sigmoid flexure. Therefore, in considering the accumulations in which the fæcal mass plays part, we are to look to two points specially, namely, the *cæcum* and *sigmoid flexure*. The ascending, descending, and transverse colon are free from such obstruction. The muscular coat of the rectum is composed of circular and longitudinal fibers. The circular are internal, the longitudinal are external. It is an aggregation of the circular fibers which go to make up the sphincter muscles, and also that which stands guard between the sigmoid flexure and the rectum. These fibers are separated from the mucous membrane by loose areolar tissue. The longitudinal fibers pass down the external aspect of the rectum to its lower bor der, and thence curve under the internal sphincter muscle. They then ascend and are attached to the substance of the areolar tissue. This will explain the eversion of mucous membrane which takes place in the act of defecation. The longitudinal fibers draw down the sphincter in this act, and the levator muscles retract it. It has been stated before, in the anatomy of the rectum proper, that the mucous membrane is movable. It can be now understood how it is that eversion of the mucous membrane takes place during the act of defecation. It being a truth that the membrane is everted during this act, it can be seen that any rough substance—as a matter of fact, if printed paper be used as a detergent—it could produce such a condition of the blood-vessels as would ultimately terminate in hæmorrhoids, etc. It becomes the province of the surgeon who gives attention to these diseases to lay down rules of health to his patients in regard to this very common subject of constipation. It can be very well understood how non-attention to the calls of Nature would produce fæcal accumulation in the rectum, or sigmoid flexure, or possibly the cæcum. It is very natural to infer that the anti-peristaltic motion of the bowel could lift, for a certain time, the mass, or portion of the mass, from the rectum

and would land it back into the flexure; but if constipation becomes a disease, or the bowels are not unloaded for a number of days, yet this effort would be made by Nature, a portion of the mass would be left in the rectum, even granting that a portion of it was lifted up and landed back whence it came. Therefore, the watery element being absorbed, and constipation progressing, we are likely to have an accumulation, as has been intimated, first in the sigmoid flexure, next in the rectum, and, lastly, in the cæcum. Now, it is a well-known fact that such accumulation has ended in the death of the patient. Obstruction, caused by fæcal matter in the cæcum, has been confounded, time and again, with appendicitis, and operations have been done looking to the removal of the appendix, which were unwarrantable; and right here begins the discussion of that much-discussed subject, whether these cases belong to the surgeon or physician. If the accumulation of fæcal matter be in the cæcum, it is evidently a case for the physician. If, as the abdominal surgeon says to-day, these cases are, nearly without exception, an inflammatory condition of the *appendix vermiformis*, then such cases belong to the surgeon, and an operation for the removal of the appendix is justifiable. We believe that accumulations of fæces do take place, in the locality and order named. I must differ from some surgeons who believe that the favorite site of obstruction by fæcal accumulation is the rectum proper. Therefore, I shall take occasion, in writing the chapter on impacted fæces, to state that, in my opinion, the most important part to be looked after is the *sigmoid flexure*, and not the rectum, for such trouble. I also quite agree that the cæcum may be so loaded as to be obstructed, and that the symptoms are both confusing and misleading; and, recognizing the physiology of defecation to be as we have given it, we believe that a fair trial with medicine, to the border-line at least, should be given before surgery is thought of. Now, while I agree with O'Beirne in the main, I must disagree with him, in an every-day observation of the normal bowel, as to the condition of the same. In the

majority of instances, I believe that there is some accumulation in the rectum, of fæces, *after* the daily evacuation has taken place. Therefore I am to conclude, if he is correct about the anti-peristaltic motion of the bowel, that there is also an accumulation in the sigmoid flexure. In other words, I believe that if the rectum is examined, some hours after the natural evacuation of the day has taken place, fæces may be found within its folds. This, at least, has been my observation. That they are of a dry character, devoid of the watery constituents, which have been absorbed, is the truth, and I am very much inclined to his view that, if the daily evacuation is not observed, the main portion of the mass is lifted back into the sigmoid flexure. This I believe to be one of the chief reasons for the disorders and disease found in the flexure, of which but little account is given in the books. Now, if we are to take for granted the statements of O'Beirne, which are corroborated by many who have written upon the subject, we can understand how these accumulations in the rectum and the sigmoid flexure would derange the whole pelvic circulation. Outside of doing damage to the mucous membrane of the parts, causing congestion, inflammation, and ulceration of the same, such accumulation is liable to produce external piles, to make internal growths bleed, and to cause a general atony of the gut, by pressure upon its muscular coat and an interference with its fibers. It is very natural, then, to suppose that a person in this condition should suffer from a so-called constipation, and seek the advice of a physician. It is needless to say that the prescription usually given is a purgative. It also goes without saying that such a prescription never relieves the patient. Indeed, if we would stop for a moment to consider the effect of a purge under such circumstances, we would be deterred from giving it. When we remember that the veins of the rectum have no valves, that the erect position of the human being, etc., renders these parts liable to a congested state of the vessels, it is no wonder that many diseases incident to the rectum follow in consequence of a neglected condition

which terminates in constipation. The natural pressure exerted by the mass in the sigmoid flexure or the rectum prevents the return of the venous blood, and hence causes a varicose condition of the veins. This, if kept up, ends in hæmorrhoids. The passage of such a mass is the most frequent cause of fissure of the anus. Internal fistula may result from direct pressure, causing inflammation, and then ulceration or abscess, and then fistula. By the temporary paralysis of the bowel, caused by the accumulated mass, its tonicity is lost, and hence prolapsus may result. If impacted fæces remain as the result of constipation for any length of time, this self-constituted irritant may not only result in ulceration of the bowel, but, in its effort to cicatrize, a stricture may be established. So it can be seen that many diseases of the rectum are caused by constipation and its results. But these local diseases are not all. The natural refusal to abide by the calls of Nature ends in constipation, and from this state many diseases result. It is a well-recognized fact, as intimated, that the fæces are at first soft, made so by the water that they contain. It is also true that, if the calls of Nature are not heeded, the watery constituent is absorbed, and, being absorbed, passes into the blood.

It is very easy to understand what the effect of all this is. Fæcal matter can be no more nor less to the natural blood than a poison. The red corpuscles are diseased by it; they are altered in color and have less power; their health-producing and life-giving property is destroyed. Instead of the red cheeks and bright complexion, the rapid circulation and energy that are supplied and caused by these corpuscles, we have, after the absorption of the fæcal mass into the circulation, the sallow complexion, dark rings under the eyes, cold extremities, a less supply of oxygen, and a lethargy which is due to a vitiated condition of the blood and enfeebled corpuscles. The system is not nourished as it was intended that it should be, and in consequence there is a loss of flesh. The diseased blood resulting from this condition now circulates to the nervous system, hence we have nervous

depression. If we examine a patient under these circumstances, we will find that the pulse is slow and easily compressed, and the organs of digestion and assimilation are very much interfered with. These patients will tell you that they suffer from a loss of memory, and especially that they are unable to concentrate their thoughts on any single subject for any length of time, and that in their daily vocations they are overcome by drowsiness, which interferes with their business as well as their happiness. Although they are frequently drowsy and go to sleep even when trying to pursue their business vocations, they are not relieved by sleep, either by day or by night. If this condition continues, all the functions of the body may be deranged, and, if not relieved, actual disease and suffering are the result. There are many factors concerned in the production of constipation which vary in different cases: First, it must be agreed that where food is not properly digested or assimilated, the intestinal tract must suffer, and eventually end either in a diarrhœa or constipation. Second, it is too much the habit, in treating a functional stomach indigestion, to forget that an intestinal indigestion may also exist. Third, there may be deficiency of fluid in the intestinal canal, caused by want of a proper supply of food, excessive waste, or deficient secretion from the intestinal mucous membrane. Fourth, there may be a deficient peristalsis, especially in the large intestine, from defects of diet or from atony due to over-stimulation by purgatives, or to degeneration of the muscular coat from the effects of pressure by the fæcal mass, as the result of the accumulation of the fæces. Fifth, inhibitory influences of the nerve-centers of the brain and cord, probably affecting both peristalsis and secretion of fluid. Sixth, deficient bodily exercise and movement. Seventh, dilatation of the intestines, especially the colon, due to debility of the intestinal wall, or to actual dilatation by accumulated fæces, gaseous distention, repeated enemata, or laxness of the abdominal wall, etc. Such are the chief causes, ordinarily considered, which give rise to constipation. Any-

thing that weakens the muscular fiber of the intestine, such as deterioration by age, mental depression, deficient bodily exercise, astringent food, direct pressure, etc., is a well-recognized cause. In children, putting aside malformation, such as atresia, more or less complete, peritonitis, intussusception, etc., as causes, we have: First, food which leaves little residue—very completely digestible food, e. g., milk—fæcal matter too small to duly excite peristalsis. Second, deficiency of liquid food, not enough to drink, causing dry fæces. Third, deficient biliary secretion. Fourth, deficient secretion of glands of the mucous tract, and dry fæces. Fifth, overstimulation, and consequent atony of the intestines; loss of excitability and loss of power, caused (*a*) by coarse food; (*b*) by frequent purgatives; and (*c*) by too frequent use of enemata. To these may be added, both in the adult and in children, the dread of evacuation because of pain excited by hard stools. The resistance to the passage of fæces, partly voluntary and partly reflex, is caused by the pain that is brought on by the act, from the sensitive condition of the anus, especially by the existence of a fissure. The symptoms produced by the retention of fæcal waste in the intestines are very remarkable. In some cases there may be absolutely no derangement of the general health. This holds good, whether the patient be a child or an adult. They may eat and sleep well, be hearty and robust, and look the picture of health. Although the physiology of defecation tells us that the absorption of this watery constituent of the fæcal mass continually takes place and is a poison to the blood, in many of these patients there appears to be no fæcal absorption of the foul matter from the intestines. Indeed, the *chief* difficulty is the pain caused by the passage of the hardened, dry fæces. If it be a child, it screams and cries, and dreads the action, and will not assist by its own efforts. If an adult, they will tell you that the torture is so great when the bowels move that they will not permit an evacuation to take place, and yet often you will find that the tongue is clean and nutrition good. When we consider the anatomy of the rectum,

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we see that it is ill constructed for the purpose of a reservoir for the fæces. It differs very materially from the portions of the large intestines above it. As we have said, there are two strong layers of muscular fibers, the longitudinal and circular. The three longitudinal bands of fibers from the colon pass down over the rectum, two over the anterior and the other over the posterior surface. In addition to these, we find fibers to the rectum, placed in the intervals around the walls between these bands, forming altogether a uniform, strong, muscular layer. The internal or circular muscular coat is composed of strong fibers, placed close together and much stronger than any other part of the intestines. The sudden thickening and strengthening of this coat at the upper end of the rectum was first called attention to by *O'Beirne*, and has received the name, and is still designated by some authors as, "a sphincter of *O'Beirne*." In speaking of the anatomy of the rectum, I have said that I did not believe or concur in the opinion that such aggregation of fibres existed at this portion of the gut as could be properly called a sphincter, and I am sure that, in those instances where such a condition is detected, it can not account for the holding of the fæcal mass in the sigmoid flexure, or preventing its passage down into the rectum. The *internal sphincter* muscle is found at the lower border of the circular coat, where it forms a band or ring, made up of an aggregation of fibers.

We find near the center of the rectum two collections of circular fibers; one encircles the anterior, the other the posterior, wall of the rectum. The anterior is about three inches from the anus, and corresponds to the bottom of Douglas's *cul-de-sac*. The posterior is about an inch higher, and above the rectal pouch. These bands have been called the *third* sphincter muscle. Although their existence has been demonstrated, especially by Dr. Chadwick, of Boston, I can not believe that they act as a sphincter. Nor can I believe they are sufficient to make the prominent projections on the inside of the gut which they are described as making. Dr. Chadwick says: "At about two and a half inches from

the anus the finger encounters a confused mass of folds, through which the canal can be discovered only by considerable burrowing. Here an annular constriction, diminishing the lumen by about one half, seems to be felt. If, now, the rectum be distended with water, the finger will almost invariably detect, in place of lax folds, what still seems to be an annular constriction, but which a more careful exploration will show to be composed of two distinct semicircular bands, slightly overlapping each other, the posterior being somewhat higher than the anterior."

My observation, after a diligent investigation of the subject, has led me to believe that the conclusions of Dr. Chadwick and others are, to a degree at least, erroneous. That the passage of a rectal bougie is frequently obstructed by the natural folds of the rectum is a fact; that in some instances there is an aggregation of fibers at the upper portion of the rectum, giving evidence to the finger of what might be taken for a decided constriction, may be true; and, more than this, I can understand that such a case as Syme reports could occur. He says: "Three hundred hours were spent by a reputable physician and surgeon in introducing a bougie, at regular intervals, to dilate a stricture high up in the rectum. After the death of the patient from other causes, the post-mortem examination showed that no stricture had ever existed, but that the end of the instrument had lodged in this fold against the sacrum." Any surgeon who is in the habit of introducing instruments into the rectum recognizes the fact that the end of an instrument is frequently caught and entangled in the natural folds of the gut. But that the constrictions exist which form, or may be mistaken for, a *third* sphincter, I have never yet seen, and outside of the declaration, anatomically, I do not believe that there is any physiological demonstration of its existence. Nor do I believe that the internal sphincter muscle has much to do with the physiological act of defecation. But I do believe that the external sphincter muscle has not received that amount of consideration in this act that it deserves. My attention to this muscle as a factor in con-

stipation was first called by the lamented Dr. Richard O. Cowling, who said to me as long as fifteen years ago, while engaged in a conversation with him on this special subject, that he believed that, in many cases of chronic constipation, it could be overcome, or benefited at least, by the free divulsion of the external sphincter muscle. Upon his suggestion, I tried this in a few cases that would permit it, and reported the result to one of the medical societies. I remember that the benefit was very decided in the majority, if not all, of the cases. In the operations for internal hæmorrhoids ever since, I have been in the habit of divulsing the muscle, mainly to prevent pain after the operation, which is caused by its contraction. Many cases which had suffered from constipation before have been relieved, and I have attributed this relief more to the divulsion of the muscle than to the removal of the hæmorrhoids. The lower end of the rectum is closed by this external sphincter muscle. This is the true sphincter, composed of voluntary muscular fibers, placed close beneath the delicate integument surrounding the anus and removed from its neighbor the internal sphincter, by about a line. It is placed here as a guard for the natural evacuation of the fæces. The nerve-supply of this muscle is greater than that of any other muscle in the body, consequently, it is easily irritated, and irritates in return. The nerves come from three different sources, the internal pudic, the fourth sacral, and the posterior sacral, and, if we trace out the nervous distribution, we would find that it is in close sympathy with all the contiguous parts; but, as we have given this nerve-supply under the head of "Reflexes," it is unnecessary to mention it here.

The desire for an evacuation of the bowels begins when the fæcal mass first presses against the rectal mucous membrane. This is due to the impression produced on the terminal branches of the spinal nerves distributed to the rectal walls. This is the first point in the intestinal canal where we are aware of the movement of the intestinal contents. As the rectal contents pass on through the pouch, the internal

sphincter, like all the involuntary fibers, relaxes to allow the mass to pass. When the mass falls into the rectum, there is an automatic contraction of the external sphincter muscle. This contraction increases as the mass advances, and it is greatest when the mass presses against the branches of the internal pudic nerve, at the upper border of the internal sphincter muscle. The contraction now of the lower part of the rectum, assisted by the pressure of the abdominal contents, produces a final discharge of the mass, but before it is ended, the levator ani contracts and elevates the perinæum. This elevation of the perinæum seems necessary to discharge the last part of the fæces. As the longitudinal fibers contract, they tend to shorten and strengthen the rectal walls, and, as some say, to draw the gut up over the fæcal mass. Those inserted beneath the mucous membrane evert the membrane slightly. This everted portion is retracted at the close of the act of defecation. My investigations of the action of the internal and third sphincter muscles do not coincide with Dr. Chadwick's. He says: "The finger in the anus would invariably give rise within a few seconds to those peculiar sensations which we all recognize as indicative of an impending evacuation of the intestines, even though the excreta may not have descended so far as to press on the perinæum. In every instance these sensations would be speedily followed by the emergence from the still lax folds at the point of constriction of a mass of more or less solid fæces, which would descend rapidly to the anus. If, at this moment, the finger is kept applied to the distended semicircular bands, their muscular fibers could be plainly felt to contract behind the fæcal mass until the lumen of the rectum was completely occluded. Further careful observation with the finger led to my detecting a distinct relaxation of the tonic contraction of these bundles of circular fibers just before the fæcal mass had reached that part of the rectum. In other words, a distinct inhibitory action came into play. My attention was next directed to the action of the internal sphincter. In this thick bundle of the circular fibers of the rectum

my finger speedily detected a relaxation in front of the descending fæces."

I have already stated that I did not believe that the so-called *third* sphincter, or the internal sphincter, played a great part in the physiology of defecation. I think that the "peculiar sensations which we all recognize as indicative of an impending evacuation of the intestine," which can be caused by the introduction of the finger or any other irritant, such as, for instance, a glycerin suppository, are due to the effect of nerve irritation upon the muscular fibers of the gut proper, not to the so-called action of the internal and third sphincter ani muscles. Granting that the aggregation of circular fibers is sufficient to constitute a *third* sphincter muscle, and admitting the office of the internal sphincter to be such as is claimed by Dr. Chadwick, it would appear that, in some cases at least, after the external sphincter was destroyed, we would have these muscles assuming a double duty, as one organ often does for another, and that they would be able to retain and control the fæces; but we know as a fact, and teach it as a truth, that, if the external sphincter muscle is destroyed by any operations around the rectum, incontinence is bound to follow. The simple declaration of this fact shows beyond dispute that all the allowance for the control of the fæcal mass is vested in this muscle; and, therefore, in speaking of constipation, I have thought fit to pay more attention to it as a factor in producing and keeping up this condition than is usually given to it. When the fæcal mass, propelled by the involuntary action of the intestines, reaches the lower end of the rectum at unseasonable times, the external sphincter is firmly contracted by voluntary effort to resist the powerful expulsive efforts of the rectum. This is the only muscle at the lower end of the rectum which has such power. It is purely a voluntary muscle, and contracts by reflex action in response to any local excitation. When an irritability of this muscle is kept up, it will naturally increase in size and strength; and it is not only the voluntary action of the mus-

cle that is increased in force, but the constant presence of fæces in the rectum, and their pressure on the terminal branches of the internal pudic nerve at the upper border of the internal sphincter, produces an increased irritability of the muscle, and this contraction will increase with irritation, until the muscle will cease to respond perfectly to the will, when it desires to relax it, and what was a voluntary obstruction becomes an obstruction beyond the power of the will to entirely remove.

It is asserted that the internal sphincter muscle also becomes somewhat changed in its action, but I believe that such change can not be compared with the changes that take place in the external sphincter. I have no doubt but that the muscle relaxes as the fæces descend, and to that extent does not offer any obstruction to the act of defecation, but I have never seen the internal sphincter muscle become hypertrophied by excessive use, or a reflex irritability. The whole rectal wall contracts during the act, which forces the fæces out. Of course, this is aided by the abdominal muscles and diaphragm. When there is atony of the muscular coat of the rectum, this contraction does not take place, and consequently it is with great difficulty that the rectum is unloaded. The external sphincter muscle, therefore, is easily irritated, and consequently when the surrounding organs are diseased, being intimately connected with this muscle through the nervous system, a rigid contraction often takes place, and this is a serious obstacle to the free passage of the fæces. Now, if the irritability of the muscle is kept up, it becomes enlarged, and a constant contraction exists which causes the fæcal mass to be held in the pouch of the rectum, and as a result we have atony of its coats. As has been demonstrated in this connection, both the rectum and sigmoid flexure are filled with fæces. The colon may be doing its duty, but every portion below is refusing. When the abdominal muscles exert their force, it happens that a descent of the fæcal mass only takes place to the sigmoid flexure and rectum ; but this very force, which in the normal state aids the dilatation of

the sphincter and the expulsion of the fæcal mass, is now the cause of its being held within the rectum. Whenever the mass encroaches upon the fibers of the external sphincter, this contraction takes place at once, and the muscle closes instead of dilating, which is reversing the order of things. It must be understood also that if the constipation has become chronic, the watery portion of the mass has been rapidly absorbed, and we find the remaining fæces in a dry and hardened condition. If this lies in the pouch of the rectum for any length of time, not only does it excite a congestion, but a subsequent ulceration of the coats; and granting that the fæces are removed, and perhaps daily evacuations made to take place, the ulceration will keep up this reflex of the muscle, and cause it to act in the same manner that the pressure upon the nerves did when the pouch was impacted. These being facts, it is clearly demonstrable that the external sphincter muscle is a great if not the greatest factor in producing constipation. When we remember that it does not take much to irritate or excite this muscle, because of its extensive nerve-supply, we can set down in the list such things as fissures, irritable ulcers, abrasions, small openings of internal fistulæ, or marginal openings of an external fistula, pruritus, etc.; indeed, any condition that would excite nerve irritation will cause this muscle to contract in the manner named, and the result will be the establishing and keeping up of the constipated habit. I have no doubt but that the effect of a purgative given under these conditions will tend to keep up the constipation instead of curing it; in other words, it excites the same character of irritability of the muscle, and tends to produce its rigid contraction, and yet the majority of physicians prescribe purgatives, and the layman is so well educated to the fact, that he buys and keeps in his house some character of purgative, which he not only takes himself, but gives regularly to his family. There are a number of firms in the United States which have made immense fortunes by throwing upon the market different character of purgatives. Many of these preparations may be very admirable, and it is not to the pur-

gative itself that I object, but it is to the impression given the people that they are to use them upon all occasions. I have said in this chapter that constipation is a relative term. I mean more especially, in the application of this word, that it should refer to the effect that constipation has in a general way upon the person that is the subject of it.

In 1889 I reported to the Southern Surgical and Gynæcological Association, held at Nashville, Tenn., what I was pleased to call a "Unique Case of Constipation." It was as follows:

In the month of July of that year I was asked to see a patient in consultation with Drs. Blackburn and Corrigan. The patient was a young lady eighteen years of age, style brunette, weight one hundred and fifteen pounds, height about five feet seven inches. Coming into the room in a graceful and easy manner, she sat down and gave this history of herself in a concise and intelligent way: "Eight years ago I first noticed that I was taking on a costive habit. I would go for a number of days without having an action from my bowels. It was not until I noticed that a movement was not had for several weeks at a time, and then with great pain, that I called my parents' attention to my condition. They gave me purgatives; sometimes they would act, often they would not. Of course, stronger medication was resorted to, and accomplished so little good that at last my parents became alarmed and called in a physician. He treated me for constipation in the usual way, but I derived no good from it. Physician after physician saw me, each one treating the case very much alike. From two weeks the time extended to one month between my actions, until now the usual time, and I might say regular time—for it is with great regularity that they act—is four months. At one time I went for nearly seven months without a movement. At present it has been three months since I had an action, and I do not feel any disposition to do so. I should also mention that for several years I have had much trouble in voiding the urine; so much, indeed, that I was advised by my physician to buy and use a

catheter. I use it many times during the day and night. In that respect I can not get along without it. About two years ago, just after I had passed the instrument into the bladder, I suffered great pain. Withdrawing it, I had an irresistible desire to strain, and in the effort passed a good-sized stone. The attending physician took it to a chemist, and I understand that he says that it does not look like a stone that came from the bladder, but I know that it came from mine. My appetite is only fair, I am seldom hungry, and yet I eat quite enough, I suppose. I sleep badly, but that I attribute to my nervous condition."

After this recitation by the patient we turned our attention to the parents, who corroborated in every particular what the girl had said. Recognizing that often very great deception is practiced by patients, we questioned these honest folk in private, and they assured us that they had often put a watch on the girl to substantiate or disprove her statements, and each time it proved the truth of what she said. This was easily done, as she often did not leave her room during the four months, and some one was always with her. Her father remarked that a movement from his daughter's bowels was not only an event in the family but to the entire neighborhood. This was due to the fact that an action caused so much pain that she could be heard screaming all over the square. She would then have a swooning spell which would last for several hours, and they would often think that she would die. A careful examination of the patient was made upon the second visit, when I was accompanied by Drs. Blackburn and Vance. The following was what we observed, and the result:

Tongue slightly coated, complexion muddy, pulse sixty, temperature normal, no enlargement of abdomen, tympanitic, or otherwise. No indurations or tumors, menses regular and normal in quantity. The patient was put under the effect of chloroform by Dr. Cary Blackburn, and I asked Dr. Vance first to explore the bladder, the symptoms indicating that it should be done. This he did, and at first thought that he detected an encysted stone. He quickly changed his mind,

however, and pronounced the bladder free from stone and in a normal state, except that it was unusually large. Placing the patient in Sims's position I explored the rectum. Divulsing the sphincter muscles freely, I first introduced a large-sized speculum, oval-shaped, but could not find any unnatural condition. I then passed my hand into the rectum and felt into the sigmoid flexure with my finger. No obstruction, contraction, or impaction existed. There was present in the flexure some soft fæcal matter. Removing my hand I then introduced a No. 12 rectal Wales bougie, and through it flooded the colon with hot water. The anæsthetic was stopped, when we noticed that the pulse was very weak, and for fifteen minutes we thought she would die. Hypodermics of ether and whisky, together with inhalations of nitrite of amyl, brought her around. The bad symptoms of shock were disappearing, when she went into a cataleptic state, which lasted about thirty minutes. In a few days she was back to her usual condition. What we did in this case never seemed to affect her for good or evil. I believe the history given by the girl to be truthful in every particular. There could have been no reason for deception. She was as desirous of being cured as any patient could be. The points that I would especially call attention to are :

1. The length of the time between the actions from the bowels, averaging four months.

2. The fact that no impaction, disease, or unnatural contracted condition, existed in the bowels.

3. That no odor emanated from the body.

4. That little damage was done to the general health.

Treatment.—Having, I think, fairly demonstrated that the sphincter muscle is the principal factor in at least keeping up chronic constipation, I submit that the first thing to be done in such a case would be to examine this muscle, and if found to be in an irritable state freely divulse it. Now, I know that the majority of patients would hesitate to take an anæsthetic to have this done, and it can not often be accomplished without it ; and I also know that many physicians would

advise their patients against this procedure; but when we consider that constipation breeds a thousand ills that flesh is heir to, and also recognizing the fact that it is a disease, and one that is most difficult to cure, I feel that we are fully justified in advising the operation. Therefore, having selected the case that is suitable, under the instructions and precautions that have been given, especially where all medication has failed, I would have an anæsthetic administered, and divulse the sphincter in the following manner: It must be understood that a partial effect of the anæsthetic will not do, but that it requires complete anæsthesia in order to divulse the muscle without pain. When the patient is pronounced ready, I take either the Cook or Mathews speculum, anointing it well with vaseline, pushing it into the rectum, and then divulse as widely as the blades will distend the muscle. Then withdrawing the speculum, I anoint my two thumbs, and slipping them into the rectum, I hook them snugly over the sphincter muscle, and distend gently but forcibly; then inserting the three front fingers of each hand into the rectum, and removing the thumbs, I practice a kneading, or *massage*, of the muscle. Here I want to say that I do not follow the authorities who advise the breaking of the sphincter muscle in our efforts at divulsion. Even in the operation for irritable ulcer or fissure, I am not in the habit of doing this. Some harm might result from its breaking, but no harm can result or ever has resulted in my practice from this manner of divulsion. I frequently say to my class that the guide which shows me that the divulsion is complete is the descent of the folds of the rectum, even with the external sphincter, which is produced by the straining of the patient, or the natural falling down of the folds. After the divulsion has been accomplished, I either give a hypodermic injection of one fourth of a grain of morphine, or I insert into the rectum a suppository containing one grain of solid opium, and one half-grain of the extract of belladonna. The parts should be sponged with very hot water every hour or two until the soreness disappears. On the third morning the patient is able to get up. My habit is

to follow this operation by injections of cool water given daily, flushing not only the rectum but sigmoid flexure with it. I have practiced this method a great number of times for constipation, and, in the cases where great irritability of the sphincter existed, the constipation has been cured. In some few cases I have failed to cure. Of course, the general rules of health are laid down to these people to bring about a normal condition of the bowel. There are some general directions to be given for simple cases of constipation, which, if followed, will often result in a cure with but little if any medication. Among these I may mention the following: 1. On rising in the morning drink slowly a half-pint to a pint of water, either hot or cold—hot is preferable. 2. On retiring at night eat some fruit—say an apple, or a banana, or an orange, some prunes, or figs. 3. Dress according to the weather, but in the winter remember to dress warmly. 4. Pay special attention to the diet: by all means avoid eating any sweetmeats, candies, pastry, pies, etc., and remember that fruit that is not cooked is more digestible than fruit that is cooked. 5. Don't forget to walk a number of miles a day. 6. Avoid sitting or working long in one position. Avoid a sedentary life. 7. Have a regular hour for the bowels to move; the best time is just after breakfast. 8. While at stool knead the bowels, especially over the colon, with the palms of the hands, rubbing them firmly and forcibly from above downward. 9. Practice frequent bathing, especially in tepid or cold water, each bath followed by a brisk rubbing of the body.

These health rules can be easily followed, and should be taught to all young people. Indeed, I have often thought that the most important branch that could be taught, in female boarding-schools especially, is physiology, and the subject of the most importance would be that of constipation. My books will show a record of numerous operations upon young girls ranging from twelve to fifteen years of age, suffering from impacted fæces caused by the studious habits at school. Rising in the morning just in time to eat a hurried breakfast to get to the school-room, in order to prevent being marked absent,

and in their eagerness to capture a medal they sometimes lose their health. These girls often tell me that they did not know that it was necessary for their bowels to move with any degree of regularity. One young miss said to me that she thought once a week was quite sufficient. But suppose that a patient comes to us already suffering from a chronic constipation of the bowels, what are we to do for this class in a medical way? First of all, we are to impress them with the absolute importance of observing these health regulations that have been mentioned. Our next duty is to take them off of the line of treatment which we will usually find them pursuing. In nine cases out of ten—or I would speak more correctly if I were to say in ninety-nine cases out of a hundred—we will find them taking a purgative every night. In addition to this, many supplement this plan by taking an enema. In a condition of obstinate constipation where purgatives are given, they tend to keep up the congestion in the rectum, to irritate the external sphincter muscle, to cause internal hæmorrhoids to bleed, and predispose to an ulceration of the gut. Therefore, by all means stop it. In regard to enemas I am also just as positive that they should not be used except by the order of the physician. This habit of distending the bowel by large and copious injections of water after a while, by placing the muscular fibers on a stretch, induces an atony of the coat, and produces constipation. If hot-water enemeta are used, they very quickly produce congestion of the blood-vessels. So neither hot nor cold water should be thrown in any quantity into the bowel as a habit. We often find physicians prescribing a soap injection to produce an evacuation of the bowels, especially in children. Soap should never be brought in contact with the mucous membrane, for its effect is to dry the natural secretion of the membrane. If any injection of water is given let it be pure water. But the patient will say, "If you take me off my purgative and suspend the use of a syringe, my bowel will not move at all." The first thing to do with this patient is to convince him that no great damage is done if the bowels do not move

for several days. There are a great many people who believe that to have an evacuation once a week is sufficient; there are others who believe that it is necessary to have from one to three evacuations every day. One view is as absurd as the other. I remember that an old and honored physician once said to me that if his bowels moved freely in the morning he was sure that he would not die that day. Now, there was some reason in what this man said, as far as health was concerned; but it would be more of a mental depression than otherwise that would occur if what he looked for did not take place. Having the patient, then, under your control, and willing to abide by what you say, affirm positively that chronic constipation can not be cured in a day. Above all, you are to look to their habits and instruct them accordingly. First, I would give a free purgation by the aperient plan—say a small dose of salts, a teaspoonful to a large glass of water, taken every one or two hours until four or five doses are taken. In addition to this, wash out the rectum once with a large injection of cold water. Now, to begin with, if they are ænemic or emaciated, they should be put upon a good tonic and constructive. I think we fall into error here in prescribing the preparations of iron for these people, especially the muriated tincture of iron. These constringe by their action and prevent the normal secretion of the mucous membrane. The only preparation of iron that is suited to these cases is the sol albuminate iron, and the best made, in my opinion, is that of J. Flexner & Co., of this city. In lieu of all these ordinary tonics I would suggest as an excellent builder Trommer's extract of malt, with cascara sagrada combined. This company puts up an excellent preparation of the kind. Very many cases in my hands have been relieved by this simple method of treatment. If it is desirable to give more of the cascara, a preparation can be made consisting of equal parts of glycerin and cascara sagrada, with directions to take one half teaspoonful at bedtime; and, if this does not suffice, repeat it in the morning before breakfast. This agent I am sure adds tone to the bowel, and does not act in the ordinary way of a purga-

tive. In my hands it is an excellent agent in the treatment of constipation. Several years ago the glycerin treatment per rectum came into vogue. In some few instances it has been effective in my practice. Many firms put up a beautiful glycerin suppository, and by inserting one of these an action from the bowel will usually take place in from five to fifteen minutes. It is an excellent idea when traveling for the patient to take a box of these suppositories with him because of their convenience. I have not found, however, that they are as curative as they are said to be by some, but they are well worth a trial. The injection of one drachm of glycerin into the rectum will accomplish the same result, but the method is not as convenient as the suppository. There is an idea prevalent with the people, and I believe that the physician is responsible for it, which I am sure is erroneous, and that is that the bowel should only act at one certain time during the day. I have known patients so imbued with this idea that if their bowels desired to act at any other time they would bend their energies to prevent it. They should be instructed that, while it is proper to have a regular hour for defecation, it is also proper to let the bowel move whenever it so desires. Nevins holds that in all cases of chronic constipation there is a considerable degree of chronic irritation, and subacute inflammation of the cæcum and colon, as also the surrounding cellular tissue. This condition not infrequently becomes acute, and is diagnosticated as *typhlitis*. The result of such acute inflammation is a reflex inhibition of peristalsis, and for its relief purgatives are usually exhibited with partially successful but temporary effects. In such cases he employs twelve grains of Dover's powders, at bedtime, combined with turpentine stupes over the belly, and secures a good evacuation by morning. This, with careful regulation of the diet, and the avoidance of purgatives, soon overcomes the costive habit. The philosophy of the treatment is explained, that by the opium the irritated bowel for the time is put at rest, and is enabled to regain its tone; while the ipecac, by stimulating the secretions of the intes-

tinal mucous membrane, assist the natural progress of the strengthened peristalsis. To a certain extent I quite agree with this view of Nevins, but I would make an addition to the treatment of such a case. It has been my experience in dealing with cases that similated or were believed to be *typhlitis* that the aperient method of treatment was attended with the best results. In other words, if there has been an accumulation of fæces in or near the cæcum, that it should be washed out by aperients. After this has been accomplished, then the administration of Dover's powders, combined with the turpentine stupes, would, in my opinion, be an excellent plan. In many cases of constipation I have found that the administration of small doses of bichloride hydrargyrum accomplished a great deal—the one fortieth of a grain, given as a little pellet three times a day, until the effect is noticed.

There are many cases where it is necessary to tone up the nervous system, and no agent so beautifully does this as strychnia. A favorite formula with physicians is what is known as the aloin-strychnia and belladonna pill. My objection to this pill is that it begets a habit. We are using a purgative constantly when we have advised against such a course; therefore, I would rather administer the pellet with the aloin left out. The use of electricity has been strongly urged by some as a great agent of good in these cases. I must say that in my practice the effect of it has been entirely *nil.* A better course of treatment I have found in a general *massage.* If there is an experienced hand at the business within reach, it would be well to have the patient undergo a thorough course of treatment, and in many instances it will be found that not only is the general health improved, but that the constipated habit also is benefited. I often think that in constipation, as in many ailments of the body, if the general health is looked after, the ailment will take care of itself. In no class of disease is this more self-evident than in diseases of the womb. The old-time practitioner was in the habit of doing much local treatment for these affections,

but to-day more reliance is placed on building up the general constitution, and it is needless to say that the results are much better. So I am inclined to think of many cases of constipation. Young ladies are frequently in the habit of eating *ad libitum* of candies, etc., and when they are brought under our observation the whole glandular system is more or less deranged. Of course, they are constipated. If they are directed to leave off the candy, and substitute beefsteak, the general health will rapidly improve, and the constipation disappear.

I am frequently asked to give a good prescription for constipation. As a rule, I do not believe in such prescriptions. Every individual case must be diagnosed and treated upon its own merits. In these patients we frequently find, as I have said, an anæmic condition and general debility, with neurotic tendencies. For such a case, as a general tonic and reconstructive, the following will be found to answer a good purpose:

℞ Strychniæ ..... gr. ss.
Hyd. bichloridi ..... gr. ij.
Liq. potassii arsenitis ..... ʒij.
Acid. hydrochlor. dil.,
Tr. ferri chloridi .....āā ʒss.
Glycerini,
Elix. simpl. .....āā ʒss.
Aquæ destillat .....q. s. ad ʒviij.

M. Sig.: Two teaspoonfuls in a little water half an hour after meals.

This class of patients should be taught to observe the rules of hygiene, to pay special attention to the diet, and to avoid all stimulation in the way of alcoholic or malt liquors.

As we have stated, there are three receptacles of the fæcal mass, viz., the cæcum, sigmoid flexure, and rectum. We are too often inclined to believe that the rectum proper is accountable for constipation, admitting that the pressure which is natural here from delayed evacuations of the bowel is a source of constipation; arguing from the same standpoint, we

are forced to the conclusion that the sigmoid flexure is more accountable, for the reason that the fæcal mass is lifted back into the flexure if the calls of Nature are not heeded, and that by this time its watery constituent is absorbed, and leaves in the sigmoid the fæces in a dried condition. Therefore, it is no wonder that this proves to be an irritant, and causes trouble by its presence. I would therefore impress the necessity of looking to the sigmoid in treatment of chronic constipation. We adopt means to bring back the tonicity of the muscular coat of the rectum, and yet forget that this same quality is wanting in the sigmoid. Believing this to be true, we must turn our attention to this, the seat of very common trouble. Admitting, then, that a congestion of the vessels, or even ulceration of the mucous membrane of the sigmoid, can take place by this accumulation of fæces, we are led to inquire if the flexure proper can be treated. For a long time I was under the impression that it could not, and, if we had yet to rely upon the old method, this opinion would still be true; but since the introduction of the Wales bougie, it can be done with a very great degree of success. This bougie was devised by Dr. Philip S. Wales, of Washington, in 1876, with a view, as he says, of obviating all possible objections to mechanical dilatation of stricture; and although in an article written concerning its use in that disease, he does not seem to consider its utility in other affections, yet in my practice it has been of the greatest value in treating diseases of the sigmoid flexure and colon. I think the profession is indebted to Dr. Wales for devising so excellent an instrument by which we can accomplish this. The bougie is made of pure gum, very flexible, perfectly smooth, and varying in size. A conduit runs through the center, and terminates in the point of the bougie, for the purpose of commanding a stream of water which might be required at any moment to facilitate the introduction of the instrument. The points of the bougie are made in various shapes, with a view to meeting the necessities of special cases. The surface of the instrument is perfectly polished, which,

by reducing friction, increases the facility of introduction. The method of introducing the bougie is simple. For treating the sigmoid flexure or throwing water into the colon, I am in the habit of using a No. 5 attached to the end of a Davidson's syringe. The patient, after the bowels have been cleaned out by injection, reclines on the left side, with the thighs flexed, the surgeon's right hand grasping the bougie close to the anus, the left hand steadies it, and the bougie is gently pushed beyond the sphincter. A moderate force only is necessary to have it enter three or four inches. I then throw one syringeful of tepid water through it, and if the point has been arrested in the folds, or even against some fæces, it is enabled to pass on into the sigmoid flexure. No great amount of water should be used, because it would have to be evacuated; and no special force should be employed, because of the danger that might follow.

In these cases of constipation where it is supposed that the sigmoid flexure is at fault, I am in the habit of first injecting the flexure with a large quantity of hot water. From this I gradually inject cooler water, until at last fresh spring-water, or that which has sat upon the dresser overnight, is injected. I then prescribe the *fluid hydrastis;* a tablespoonful diluted in a small cup of water, thrown into the flexure, and allowed to remain there. This I repeat every second day. With this I alternate by using the following:

℞ Sweet almond-oil..... one pint.
Iodoform..... one drachm.
M. Sig.: Inject one ounce each night at bedtime.

It is best in using this preparation to throw an additional syringeful of hot water behind it, from the fact that it drives the oil out of the syringe. This treatment kept up for a few weeks usually eradicates the trouble in the flexure, and at the same time aids the evacuation. Of course, the part directly involved in chronic constipation is the large intestine. Landois says that the contents pass through the small intestines in three hours, and through the large bowel in twelve hours. The contents are liquid in form as they are

poured through the ileo-cæcal opening. In the colon they are exposed to the open mouths of the Lieberkuhn follicles, which take up the digested portions which have escaped the absorbents above. The longer the contents are exposed to the absorbents of the colon, the watery portions will be extracted, and the more solid will be the mass. The secretion from the large intestine is mostly mucous and this lubricates the walls. There is not sufficient watery secretion from this part to modify the consistence of the fæces. Now, if the mass remains in the colon or the sigmoid flexure longer than this, it interferes with the natural order of things, and therefore I have suggested that we have an abnormal condition both in the colon and the sigmoid flexure, as well as the rectum, in these cases. The peristalsis in the large intestine depends very much upon that in the small intestine; therefore I have believed that, when it is deficient in the large intestine, it should be aided by the injections named. We fall into error by prescribing under these circumstances an injection into the rectum through the ordinary enema-tube. Of course, this falls short of the part intended, in that it lodges in the pouch and accomplishes very little good. If thrown into the sigmoid flexure and the patient allowed to rest on the left side with the buttocks elevated, the injection will run into the descending colon, and anything short of this will not accomplish the desired effect. If we expect to cure constipation, we must first recognize the cause of it, and the cause may not rest altogether in the larger bowel. Purgatives under the conditions that I have named do harm rather than good, and should never be relied upon in treating any case of constipation. It has been suggested by some that in these cases we can bring about the required effect by the use of electricity. Theoretically this would appear to be an admirable remedy, but practically it is a failure, at least it has been in my hands. I would much rather rely upon medicines which act directly on the motor center of the muscular coat of the intestine—this center being, according to Landois, the *plexus myentericus* of Auerbach, located

between the two layers of muscular fibers in the wall of the bowel.

There are many medicines that are said to act upon the motor centers; among them can be named aloes and nicotine. There is an old idea prevalent that the taking of aloes induces to a congestion of the veins of the rectum. So sure am I that properly administered it has directly the opposite effect, that it is a favorite of mine where a drug is required in treating constipation. As to nicotine, it is proverbial with the smoker that a cigar after breakfast will frequently cause an evacuation of the bowel. I have recommended strychnia in the treatment of this trouble, because it acts indirectly through the cerebro-spinal nerves. The impressions are carried to the plexus myentericus, through the cerebro-spinal nerves, which stimulate this center, and contraction of the muscular coat is the result. One of the greatest mistakes in treating constipation is the giving of tonics too freely. Large doses of iron, as an example, will counteract the very effect that we are trying to induce. As a habit it is very well to tell the patient to drink freely of cold water, or perhaps of very hot water, before breakfast, or at bedtime. Mineral waters can be taken *ad libitum*, such as Vichy, Saratoga, and in obstinate cases the Carlsbad. They tone up the bowel without doing any harm. If the liver is at fault, it must be looked after and the proper remedy administered. As a cholagogue nothing is better than the small doses of the bichloride of mercury, as has been stated. If atony of the coat is due to centric disease of the nervous system, we must direct the remedies there, but at the same time keep the rectum and colon entirely free from accumulations.

It must be remembered that constipation may arise from a condition of the stomach inducing dyspepsia; and, besides that, there are many cases of this trouble which result from *intestinal* indigestion. There are others where the cause may be traced to a gastro-intestinal catarrh, a chronic catarrh, or perhaps an ulcer of the stomach. Either one of these conditions being diagnosed, the patient should be referred to the

general practitioner, because, if the ordinary remedies and treatment are used for this affection, no good will be accomplished. Dr. Theodore Flatau, at a meeting of the Berlin Medical Society, in a paper read on the treatment of chronic constipation, gave a novel method of treatment. He states that the method is easiest of application in those cases which are the result of chronic obstipation and relaxation of peristalsis, a chronic proctitis, and the prolapse of a greater or less portion of rectal mucous membrane at the anus. The nates are widely separated, and after washing the exposed mucous membrane, enough powdered boric acid to cover the tip of a knife-blade is strewed upon or rubbed into it. In patients in whom the rectal mucous membrane is not visible the powder must be insufflated. It is desirable that the treatment should be carried out by the physician himself the first few times. Each application requires about three drachms (forty-five grains) of boric acid. The patient must afterward rest quietly so as to give the powder time to be taken up. He says that in from one half to three hours we will be almost certain to observe pretty strong peristaltic movements along the course of the colon, and probably also along the small intestines. About the prompt action of the remedy he says there can be no doubt, for he has demonstrated it in a number of cases. In the first few days of treatment an evacuation occurs quite regularly three or four times a day. It is of importance to tell the patient to obey the inclination to defecate, which is weak at first, for, if this be not done, the stronger peristaltic movements may also be overlooked. A so-called tolerance of the drug is not established. Among the cases which plainly presented the indication noted above, the author has never known the remedy to fail him. On the contrary, he has been able to see not only a permanent strengthening of the muscular structure of the colon, but also a return to normal peristaltic activity where the treatment was carried out for some time, and the intervals between the single applications were gradually increased. In proof he submits some brilliant results. The

author assumes that a similar stimulation of the mesenteric plexus is brought about by the irritation set up by pure boric acid applied to the rectal mucous membrane, as is accomplished under normal circumstances by the voluntary movements of the levator and sphincter ani, or of those set up by the passage of the electric current. In answer to the objection that may be brought up against the long-continued use of boric acid, that its absorption may prove harmful, the author brings to mind the experiments of Neumann, of Dorpat, the therapeutic results from the internal administration of boric acid reported by Rosenthal, and the case of Molo Denkow.

I have given this treatment a fair trial. In all lesions around the anus from pruritus, fissure, eczema, or wounds inflicted, the boric acid is a favorite application of mine. In many instances I have been persuaded that the action has been as the author has stated; anyway, as it is a simple method and can not result in any harm, it is well worth the trial in cases of constipation. The injection of large quantities of water into the colon, known as the Hall treatment, is just at present greatly in vogue in this country. To show how erroneous his statements are: in a little pamphlet which goes with the treatment as sold, he states that he himself was cured of *consumption* by what he pleases to call his own method. It is also asserted that dyspepsia and its sympathetic evil effect on the throat, liver, heart, lungs, etc., can be eradicated by this manner of treatment. Indeed, he appears to think that what he is pleased to call the engorged colon is responsible for many, if not all, of the ills of the flesh, and therefore it is used as a remedy for them all. He says that he began by purchasing a common bulb syringe, and at the first attempt forced a pint of water into the rectum, though with considerable difficulty; but, small as was the quantity, its discharge produced a more beneficial, restful, and exhilarating effect over the whole organism than that of any cathartic ever taken. The next evening he doubled the quantity, forcing a full quart of warm water into

the colon. Accordingly, two evenings thereafter he resumed his task, measuring out two quarts of water; to be comfortable to the hand, and to increase its lubricating quality (?) he added a little *soap*, owing to this increased quantity, which required a still greater effort to inject it, particularly in forcing it past the sigmoid flexure, or first bend in the colon, just above the rectum. At the next effort he injected three quarts of tepid water. Three evenings later he injected slowly four quarts of water!

The student of anatomy will see at once the errors in this statement. Of course, we all recognize that a thorough clearing out of the intestinal tract is a good preliminary to the treatment of almost any disease, yet we know how absurd it is to talk of the injection of water into the rectum curing any pathological condition in the lungs. As far as the washing out of the bowel is concerned, it can be much more easily and effectually done by a good aperient than by any injection. Again, as I have stated, to accomplish the good even that he claims, or, more to the point, what we claim, the washing out of the colon and preventing the impaction, the water should be thrown into the *colon* and not into the rectum, as he suggests. Forcing the water from the rectum into the sigmoid flexure, and farther along into the colon, by depositing it in the pouch of the rectum, can not be accomplished except by a slow process, and the syringe does not aid it. If it is the absorption of the water that we want, the colon is the proper place to have it absorbed. His most remarkable advice is in recommending this treatment to persons in the most exuberant health, at least every third night, in order, as he says, to keep pure and uncontaminated the circulation of the vital fluid of the system. (?)

In a paper read before the Mississippi Valley Medical Association, September 26, 1888, by Dr. George J. Cook, he said: "In the autumn of the year 1882, while using large injections of hot water to remove a fæcal impaction located in the ascending colon, my attention was called to the rapid absorbing powers of the colon, and also the effect as a diuretic

of water thus introduced in large quantities into the circulation. This patient, to relieve intense pain, excited by the hard fæcal mass, had taken freely of morphine and was thoroughly under its influence when I first saw him—a good condition in which to begin the treatment, which consisted in, viz., the injection of water to soften the obstruction. I threw into the colon about a gallon of water, at a temperature of 115° F., and instructed the patient to retain it as long as possible. Next morning, when I called, the patient in alarm informed me that the water had not yet passed away, and during the night he had had great trouble with his bladder, having to relieve it every hour. The quantity of urine passed during the night was almost equal to the water injected during the evening before. The hot water had also the effect of relaxing the colon and relieving pain, he having no occasion to take more morphine during the night. Having to repeat the injection several times before the obstruction was removed, I closely observed the result. Each time before repeating the injection I gave a full dose of morphine to quiet peristalsis, and with this preparation the colon retained the water without pain or inconvenience to the patient. It was rapidly absorbed, and within eight or ten hours from three to five pints of urine would be passed, varying in proportion to the quantity of water used. His skin was moist, but no diaphoresis occurred. Since that time I have had occasion very many times in my practice to use large injections of water in the colon for various diseased conditions, and have abundant opportunity of observing the repetition of the facts stated in connection with the first case in regard to the rapid absorption of a large quantity of water by the colon, and its immediate effect as a diuretic. I have injected water in a perfectly healthy colon to observe what quantity could be held without the use of morphine to quiet peristalsis, but never succeeded in having a quantity held and absorbed that would materially affect the quantity of urine. When we wish to place the colon at rest to retain and absorb water, it is best to give the morphine a half hour or an hour before injecting the water, and

the injection should be made directly into the *colon* and not allowed to flow through the rectum by the use of the ordinary syringe. The best instrument for the purpose is the Wales rectal bougie, introduced until the end rests in the sigmoid flexure ; then, with the syringe attached to the outer end, the colon can be filled without distending the rectum. The water should be made to flow very slowly ; the fountain syringe is the best for the purpose. The temperature that I have found most agreeable is from 110° to 115 F. The desirable position for the patient is on the back, with the pelvis raised slightly. This enables you by percussion to trace the water as it fills the colon, to tell when it reaches the cæcum, and the amount of distention. If there is no obstruction the water will flow freely around the colon, which should be only moderately distended—usually from three to five pints can be used at an injection. The normal colon is slow to respond to excitants compared with the rectum, the latter being a much more sensitive part of the large intestine, having a nerve supply direct from the spinal cord. When the healthy rectum is distended it responds quickly and dispels its contents, and this excitation will be transmitted to the colon and cause it to act more promptly ; but when the normal colon alone is distended by injection, it requires from fifteen to thirty minutes for peristalsis to be excited. This is the special reason for throwing the water into the colon when we want it retained. After free diuresis was caused in this way in a healthy person, I examined the urine to determine if the solids were increased during the twenty-four hours, but never found any increase in their amount, and reason would not indicate that there should be any increase in a person perfectly healthy."

I have quoted Dr. Cook *in extenso*, for the reason that, instead of being a corroboration of Hall's ideas, it is really a refutation of them, Hall dealing with the body from a physiological aspect, or advising the use of his method when disease does not really exist, and Dr. Cook using the remedy only when a pathological or abnormal condition does exist. In other words, his investigations were in using large injections

of water for the purpose of washing out the colon and the sigmoid of an impaction of fæces. We have already stated what would be the result of such impactions. His observation is, then, that in this *abnormal* condition of the colon a rapid effect is had upon the kidney, partly from the fact that, owing to the disease existing in the mucous membrane, and that the water was injected into the *colon*, and not into the rectum, it had this effect upon the kidney. He also informs us that this effect is not had when the water is thrown in large quantities into the colon, and more especially into the rectum, when no pathological condition exists in them. To meet the condition which existed in Dr. Cook's cases, we could heartily recommend the plan—viz., to wash out the colon of any accumulation, or to have a good result upon a diseased surface; but, as he informs us, this could not be accomplished in any other method than by throwing it to the seat of trouble. Now, to the contrary in the Hall method, this large amount of water is thrown into the rectum proper by the ordinary enema tube, and its effect is very different from the injection as practiced through Wales's bougie by Dr. Cook into the colon. It is absurd to say that this injection into the rectum will accomplish any good to the general health when no disease exists. In the first place, this enormous quantity of water thrown into the pouch of the rectum distends its muscular walls beyond that of a normal capacity, and frequently repeated will cause a relaxation of the muscular fibers, causing them to lose their tone, hence ending in an atony of the gut; and when the injections are left off, to result in constipation. It is a well-known fact to the general practitioner that where a patient has been in the habit of using an ordinary amount of water as an enema it has induced this very state which calls for a continuance of the injection. The absorbing power of the rectum is not equal to that of the colon, and, consequently, if the injection is called for at all to meet any special indication, it should be thrown into the *colon* and not into the rectum. Again, the secretion of mucus by the mucous membrane is of absolute necessity in aiding the fæces to pass

quietly through the gut. Now, we know if there is a daily injection of water, especially in large quantities, either hot or cold, it interferes with the secretion. When the body is in a normal physiological condition, it needs no medicine. If the liver, or the stomach, or the kidneys are doing their proper duty, it is foolish to say that it is necessary to medicate them, anticipating disease. If the colon, sigmoid flexure, and rectum are doing their duty, it is just as foolish to say that they should be injected with large quantities of water to keep them from becoming diseased. I can quite understand that in febrile conditions, when the water is being rapidly taken from the system by the cutaneous and pulmonary evaporation, and the renal blood pressure is greatly lessened by the attraction of blood to the surface of the body, the kidneys often become inactive. In such cases, if a free diuresis can be excited by the introduction of water through the colon, it would be a good idea to introduce the water. In cases of continued fever, as suggested by Dr. Cook, when the tissues are being desiccated by the free evaporation and emaciation is progressing rapidly under the influence of increased temperature, and only a small quantity of fluid can be taken by the stomach, great good can be done by conducting water freely through the colon into the circulation. In these cases the blood-vessels are filled and the tissues again supplied with water, which will induce a free action of the kidneys and also other glands of the body, and wash out the waste material, the result of rapid tissue change which takes place under a high temperature. I can also understand how such treatment, used after the manner of Dr. Cook, would benefit diseases of the kidneys. In renal hyperæmia, when we scarcely dare to give a diuretic that is irritating or stimulating, it is safe to introduce water for its diuretic property ; or in acute and chronic parenchymatous nephritis, when the tubules are clogged with epithelial or waxy casts, the large quantity of water which can be made to flow through the kidneys in a short time by this method will wash out the casts and clear the kidneys. We also know that water absorbed through the

colon enters the portal circulation, and to reach the general circulation has to pass through the hepatic capillary system; therefore, in some liver troubles, it might be beneficial. But it is a very different thing to say that this large amount of water should be made to pass through the kidneys when the tubules are not clogged with epithelial casts or anything else, but, instead, to make the kidney do double or triple duty in a state of health. Therefore, while I am inclined to commend the views of Dr. Cook, I am not prepared to admit that water, used after the method of Hall, can do any good; but, to the contrary, I can see in it an agent that will do much harm.

CHAPTER IV.

ANTISEPTICS IN RECTAL SURGERY.

At one time I seriously doubted if the antiseptic treatment would obtain in rectal surgery as in other operations. Since I have fully tried the precautions and rules in this department of surgery I am persuaded that, with care and attention to details, the same advantages are to be obtained. Not only do we get quicker results by their use, but we also prevent septic infection, which sometimes follows wounds around the rectum. When we remember that it is not the size of the wound which controls the amount of sepsis, but the exposure to the cause, we can understand that the operation on a simple pile, whether by ligature, clamp and cautery, injection or otherwise, may result in septicæmia, tetanus, etc. When we remember, too, the large amount of blood that goes to the rectum, and the close continuity of the glandular system, it is no wonder that a septic infection can and does take place from wounds inflicted in this locality. It is a fact worthy of note that persons suffering from a malignant affection of the rectum die often of rapid sepsis.

Tetanus is regarded to-day as a germ disease, and we no longer talk about "nerve irritation" as being the prominent factor in the disease. It is only necessary to refer to the authorities to see that many surgeons doing this special work have met with some death or deaths from tetanus. But it is a noticeable fact that since the antiseptic treatment has been observed in the surgical treatment of these diseases but few, if any, deaths from tetanus have been reported. Therefore, recognizing that erysipelas, pyæmia, and tetanus may complicate these operations, and knowing now that they are each

due to infection, we can no longer doubt that, for the safety of the patient at least, the antiseptic treatment should be scrupulously practiced in each and every operation around the rectum. In the operating room I have the following articles, to wit:

Two earthen bowls, two earthen dishes, one irrigator, one bottle of Johnson & Johnson's bichloride-of-mercury tablets, one bottle of carbolic acid, one package of absorbent cotton, one rubber sheet, one bottle of ligatures (silk), one bottle of prepared cotton and gauze sponges, one bottle of iodoform, drainage tubes, one razor, one nail-brush, bandages, bichloride gauze, iodoform gauze, one jug of boiled distilled water, one waste-water bucket, twelve sublimated towels, one dozen safety pins, one teaspoon, one chloroform or ether cone, tubes of vaseline, one hypodermic syringe, one bottle of chloroform (Squibb's), one can of ether, sulphate-of-morphine tablets, brandy, nitrite of amyl.

It may appear to some that this is a long list, and there are those who would question the necessity of some of the articles herein named. To such I would say that if any one article in the list is left out, the day may come to the doubting surgeon when he will wish that it had been included. When I look back over my past surgery and remember the death of a patient from tetanus resulting from the ligation of internal hæmorrhoids, I wonder, if I had remembered to have taken my little tablet of mercury, if she would be living to-day.

To begin: I presuppose that the room, table, instruments, vessels, assistants, and myself have been made *aseptic* in the usual way. One earthen bowl contains the sponges in mercuric solution (1 to 5,000). The other bowl holds the instruments in a three-per-cent solution of carbolic acid, and a dish the ligatures and needles. The irrigator is filled with the same solution of mercury as the first bowl. The rubber sheet is to drain the water, blood, etc.; and the basin is to catch it. The ligatures are to be used, of course, in the operation, in tying piles, polypi, tumors, blood-vessels, etc. I

have specified silk, because it is better adapted to all these operations than anything else. I designate cotton and gauze sponges because they can be easily made *aseptic*, and thrown away after using, this being safer than trying to disinfect a sponge. I use iodoform because I believe it to be the best surgical dressing yet devised. I say this advisedly, because I have tried in vain to find a substitute. My experience with the agent has taught me to believe with Billroth that "iodoform exerts a great formative influence on the smaller vessels, and these soon begin to grow out and multiply, in an extraordinary manner, by constant production of offshoots and capillary loops. The energetic growth of living tissue seems to rob the microbes of their nourishment, and in the struggle for existence they succumb to the growing cells of the vessel walls."

I also agree with Marcy when he says: "In a general way, I believe the great value of iodoform as a dressing lies in its extremely slow solubility, and that iodoform poisoning is far less common than generally supposed." But I do not agree with Stimson, who says: "Instead of dusting iodoform in a wound, it is better to spray the surface with an ethereal solution of iodoform." I have been using the powdered iodoform ever since it was introduced, in small and large wounds, and I have never seen any constitutional effect in a single case, nor any bad local effect except in two cases, and I am sure that in these it was due to an idiosyncrasy.

To proceed: I use the drainage tubes when required. The razor is used in shaving the hair off the parts. Iodoform gauze is mentioned, because I invariably use it after operating to dress wounds. I boil the water to kill the germs. I sublimate the towels because it is necessary. I have a teaspoon for various purposes, giving hypodermics, etc. The safety pins are better than those of other kinds. A cone is kept prepared, because, if it is not ready, one has to be made. I use tubes of vaseline, because it is purer than when in cans. A hypodermic syringe is needed, because you are likely to administer morphine. I specify Squibb's chloroform and

ether, because I think they are the best. The morphine tablets are kept, because after these operations it is necessary to have them. I have suggested that brandy be convenient, because it is often needed; and, lastly, nitrite of amyl should be within reach in case of chloroform poisoning.

I have run through the list, and I think that they are all necessary. The evening before doing an operation I have the patient take a purgative, and the next morning an enema. Just before going to the operating room a hot bath is given. On the operating table the parts are shaved and then washed with bichloride solution thoroughly. I do not think Gerster's suggestion, that an antiseptic sponge be pushed up the rectum and kept there until the operation is finished, is a good one. With the preparations named, and the rectum irrigated, the patient is now ready for whatever operation on the rectum or anus you are to do. If it be for piles, "all internal piles are tied, and all external piles are cut off." The wounds are dusted with iodoform and the gauze is softly packed into them, or laid over them. Cotton is then placed over the gauze, and a T-bandage applied. The dressing is not removed until the third day, when the bowels are moved. The parts then are dressed with a hot mercuric solution, dusted with iodoform, and gauze, cotton, etc., applied. If the case be one of fistula in ano, all wounds are irrigated during the operation with the mercury solution, dusted with iodoform, gauze placed in, and a T-bandage applied. If these precautions be followed, the largest wounds will heal without a drop of pus. My assistant lately carried through six weeks of treatment a wound which was made by the removal of the entire left buttock, without a single drop of pus.

I have said that the silk ligature is used in preference to any others in these operations. I should make one exception. In doing a colotomy, I am in the habit of stitching the gut to the abdominal walls with catgut, for the reason that it can be easily absorbed. A thin piece of rubber is then placed over the wound after dusting with iodoform.

Therefore I affirm that much better results can be obtained

in rectal surgery by using the antiseptic treatment than by not using it.

Although a firm believer in *aseptic* surgery, I sometimes regret that the two terms are so closely allied; for in teaching, especially, I have seen much confusion arise over them. I do not think that there is any middle ground in antiseptic surgery. I can quite understand how an antiseptic surgeon can be, and is, an *aseptic* one; but as the term *antiseptic* must embrace chemical solutions, at least for elucidation, I can not be, strictly speaking, an *aseptic* one. I also know that many who have written on antiseptics say that it must be *absolutely* thorough in every detail, or it is worse than none at all. I can not agree to this. It is certainly better to be half clean than not clean at all. It is also better to observe two thirds of the antiseptic precautions than not to observe any of them. There are some excellent surgeons who insist to-day that they can get just as good results from doing an operation *aseptically* as *antiseptically*. In this list we find some gynæcologists especially, for the reason that all are agreed that the chemical solutions should not go into the peritoneal cavity, and some general surgeons affirm that wounds will do just as well when treated by a strict observance of surgical cleanliness as when treated according to antiseptic rules. Now, I might agree that when union by first intention is anticipated, such result can be, and often is, obtained by aseptic practice; but suppose on a subsequent visit it is found that the wound is septic; will the dressing of it under these circumstances, by the "surgically clean treatment," eradicate the pus, or prevent the existence of more? I think not. Time and again I have directed my assistants to try the plan and observe results. It does not matter how hot the water is, or how cleanly the surroundings; a wound that is septic will remain septic after dressing in that manner. In other words, I am satisfied that a wound healing by granulation will continue to discharge pus, unless treated by the chemical antiseptic plan. A solution of the bichloride of mercury will not only prevent pus, but will also eradicate it after

it has made its appearance. Of course, I wish to be understood as meaning that all the other precautions are to be observed. Now, unfortunately, nearly all the wounds inflicted around the rectum have, from the nature of things, to heal by the granulating process. If a fistula in ano, simple or complicated, is divided, the wounds heal *from the bottom*, save in the rarest of cases. If hæmorrhoids (internal) are ligated, a base is left which must heal by granulating. If a growth, malignant or non-malignant, is removed from these parts, the same method of healing obtains. Again, because of the location, these wounds are more liable to infection, and, as in fistulous tracts, are already infected. I then claim that, to get the best results, the solutions, etc., which go to make up the list that I have named should always be in reach of the rectal surgeon. And I am also constrained to believe that when failure attends the desired results, it is more the fault of the surgeon than of the wound. If we are dealing with dirty surroundings, we must not only attempt to prevent the dirt getting into the sacred precinct of the wound, but also, if said dirt has already taken possession, we must sterilize it. To practice antiseptic surgery as it should be practiced is a very difficult thing to do, and requires much labor; but I must submit that it is worth the labor. I like the term antiseptic better than "surgical cleanliness." It hits the nail more directly on the head, and if we were to maintain that we are to be "surgically clean" in doing operations, who, I would ask, is so clean? Would it not be a good idea to make a combination, as it were, of the *aseptic* and the *antiseptic* plans and get as perfect and absolute cleanliness as possible, and then throw in the chemicals for good measure? The surgeon today who claims to work under the strict *aseptic* idea will, if observed, be seen to be the very best of *antiseptic* operators. To such a one no argument need be addressed; but I have been explicit, that I might be plain to the student who is a beginner in practice. Mr. Allingham can do a colotomy with equal dexterity, whether he makes the incision in the lumbar region or the groin. One less expert might select the ingui-

nal region, because the operation is simpler, though perhaps not the best. A student who thought it unnecessary to select the most difficult plan of treatment for a wound would make himself content with a simpler plan, though less effective.

To conclude: I would say that although I might agree that in many operations chemical antisepsis could be dispensed with, I am persuaded that in dealing with the diseases incident to the rectum it is best to fortify yourself with the list I have named. The following scheme of the antiseptic method of wound treatment by Dr. Albert Hoffa, Privat Docent of Surgery in the University of Würzburg, which has been translated from the German by my friend Dr. Aug. Schachner, will be of great service in aiding the operator to a correct understanding of the subject:

Aseptic Operation. *Disinfection.*—1. Protection against atmospheric infection. 2. Protection against contact infection. Practically all objects in the operating room are washed with a five-per-cent carbolic-acid solution.

(*a*) *Disinfection of All Persons engaged about the Operation.*—The same should, at least before a major operation, have taken a warm bath, together with a change of fresh linen. The hands demand special disinfection. These are managed after the precepts of Kümmell or Fürbringer. The main point is the thorough cleansing of the ungual region by means of a knife. Kümmell then directs a washing and brushing of the arms and hands for from three to five minutes with potash soap and warm water, afterward a two-minute brushing with chlorine water, or a three- to a five-per-cent carbolic solution (one tenth per cent sublimate). Quicker and equally as safe, cheaper and less straining upon the hands, is the cleansing method of Fürbringer—cleansing of the ungual region with a knife, a one-minute brushing of the arms and hands, especially the subungual spaces, with soap and very warm water; then washing for one minute in eighty per cent of alcohol, and for one minute in two per cent of sublimate, or three per cent of carbolic acid; the hands are then

either dried with a sterilized towel, or, what is better, allowed to remain wet.

(*b*) *Disinfection of the Operative Region.*—The patients, if possible, are bathed several times before the operation, and then the operative field covered with a fomentation of a three-per-cent carbolic solution, or one tenth per cent of sublimate solution. Hairy spots are previously shaved. Immediately before the operation the shaven spot and surrounding parts are brushed and washed with potash soap, then rubbed off with ether or oil of turpentine, irrigated with one-tenth-per-cent sublimate or three-per-cent carbolic solution, and further covered with compresses dipped in one-tenth-per-cent sublimate or three-per-cent carbolic solution. The environs of the field of operation are covered with disinfected hospital cloths, or, still better, with towels saturated with sublimate solution.

(*c*) *Disinfection of the Instruments.*—The instruments should, if possible, be made of one piece of metal and without furrows. They are brushed with a five-per-cent carbolic solution; then, if possible, sterilized in a current of steam, or thoroughly heated upon asbestos plates, or, where this is impracticable, boiled in a five-per-cent carbolic solution, and during the operation kept in a three-per-cent carbolic solution. According to Redard, the safest and most convenient disinfection is by means of compressed steam of 110° temperature (centigrade) throughout, in a Rohrbeck's digester, for from fifteen to twenty minutes.

(*d*) *Disinfection of the Sponges.*—New sponges are prepared in the following manner: They are cleansed in soda solution, and immersed for twenty-four hours in a solution of permanganate of potash (1 to 500), whereby they become brown; then bleached in a wash-bowl of water with the addition of ten tablespoonfuls (five ounces) of hydrochloric acid and fifty grammes (745 grains) of hyposulphite of soda. If thus cleansed, they are then thoroughly washed with hot water and potash soap, and kept in a five-per-cent carbolic or one-tenth-per-cent sublimate solution. Suitable vessels are procured for the purpose of keeping in readiness different

sponges for every day in the week. Disinfection of infected sponges is best effected in this manner: They are allowed to remain for twenty-four hours in lukewarm water, or, if possible, in running water; then washed with soap and hot water, and then kept in five-per-cent carbolic or one-tenth-per-cent sublimate solution. Lawson Tait wraps the clean sponges in gauze, which acts as a filter, withholding the organisms. The sponges are advantageously replaced by gauze or balls of absorbent cotton.

(*e*) *Disinfection of the Wound.*—Aseptically prepared wounds are seldom irrigated with constantly irritating antiseptic remedies. Their cleansing, when desirable, is best effected by irrigation with sterilized water or a seventy-five-hundredth-per-cent solution of common salt. If the asepsis is not certain, then irrigation with a one-twentieth-per-cent sublimate or one-per-cent carbolic solution should be employed. In operations within the mouth or about the bladder or intestines, irrigations of salicylic acid (1 to 1,000), or boric acid two per cent, are most preferable. Lastly, iodoform ether (1 to 10) is distributed upon the wound with a syringe. The secretions of the wound are removed through one of the enumerated means of drainage.

Antiseptic Operation. *Disinfection as in Aseptic Operations.*—Frequently too concentrated solutions are employed, and thereby poisoning is produced. The so-called fractional sterilization is better, i. e., repeated irrigations of diluted solutions, as ten-per-cent sublimate, two-per-cent carbolic, two-and-one-half-per-cent acetate of alumina. After irrigation with the preceding solutions the wound should be sponged with a five- to a ten-per-cent chloride-of-zinc solution, or a ten-per-cent oxide-of-zinc mixture, or a mixture of equal parts of a three-per-cent carbolic acid and tincture of arnica. Perfect drainage should be had. Locally, lukewarm baths of one-tenth-per-cent sublimate, three-per-cent carbolic, or two-and-a-half-per-cent acetate of alumina solutions. As few as possible sutures, fomentations of three-per-cent carbolic solution, suspension and immobilization of the wound.

Before closing this chapter I desire to call attention to the anæsthetics, both general and local, which the rectal surgeon is called on to use in doing his special work. In the majority of operations done on the anus and rectum it will be necessary to use an anæsthetic. They are generally painful of execution, and the patient will insist upon having some form of anæsthesia produced. Generally the first question asked is whether we can use a local anæsthetic in lieu of chloroform or ether. Most people are aware of the discovery of hydrochlorate of *cocaine*. Such excellent results have been attained in the hands of the specialist, notably the gynæcologist, oculist, genito-urinary surgeon, and I may say the general surgeon, that the rectal specialist hoped for the same good results. I am sorry to say that in my hands at least it has not met such expectation. Outside of the danger to life —and all must admit that there is some danger, especially when used hypodermically—it has not been of much use in rectal surgery. In some cases, however, it can be used with some benefit. By throwing the agent into close proximity to a rectal abscess, it can be opened with but little if any pain. I am in the habit of taking the salt with me and of making my own solutions. In a case of abscess I take one half of a grain, dissolve in twelve or fifteen drops of water, draw into a syringe, and throw it into the tissues alongside of the abscess. If sensation is not deadened in ten minutes, inject another half grain. Then waiting a few minutes, you will find that the cutting can be done without pain. If the case be one of simple fistula in ano, it can be divided freely, edges trimmed, etc., with but little distress. External hæmorrhoids can be cut off by its use. Besides these simple operations it is of little utility around the rectum. If the fistula be a complicated one, if internal hæmorrhoids are to be operated on, if the sphincter muscle is to be divulsed for any purpose, if a stricture is to be cut or a cancer removed, if the gut is to be handled at all, or the sphincter plays any part in the operation, *cocaine* is of no use. I wish that I could report differently, but such has been my experience with the agent.

Operations on the Rectum under Whisky.—Several years ago I reported to one of the medical societies five operations under whisky for rectal diseases. I had noticed that some general surgeons had reported a number of operations, among them amputation at the thigh, under the anæsthetic property of whisky. I selected those cases in my practice who objected to the use of chloroform or ether, or where I myself thought them inadmissible.

Case I.—Judge T. came to me suffering the most intense pain from an irritable ulcer of the rectum. He described his sufferings as terrible, coming on at every action of the bowels, and lasting for hours. He had been advised by his physician not to take an anæsthetic because of some heart trouble. He being firm in the conviction, and not wishing to take an anæsthetic anyway, I suggested that he take whisky to its full effect. He was not a drinking man, but agreed to try it. I sent him to his hotel, with directions to take two ounces every half hour until he had taken a pint. I should remark that the patient was a robust, healthy man, of about forty-eight years of age. I was detained at my office a little longer than I expected, so I arrived at his room behind time and found him in bed "dead drunk." By the aid of my assistant I drew him to the edge of the bed, introduced a rectal dilator, stretched it to its full capacity, then finished the job with my fingers. During the operation he grunted a few times, but did not move or realize what I was doing. I left him in charge of the assistant, and did not see him again until the next morning, when I met him in the rotunda of the hotel. He told me that he did not remember or know that I did any operation on him. He was entirely relieved and went home on the second day. The amount of whisky taken was twelve ounces. The guide to the amount is, of course, the effect.

Case II was for a similar trouble in the person of a very worthy physician who lived forty miles distant. He was directed to take two ounces every half hour, beginning in time to anticipate my arrival on the train. When I arrived I found him raising quite a disturbance in his room by his wild ges-

ticulations and loud talk. I gave him another "stiff" drink, in a short time persuaded him to lie down, and in a few moments he was sound asleep, when I completed the operation and left. He told me afterward that he did not suffer any pain; indeed, did not remember that I was there at all. He drank about one pint. To get the full effect of whisky it must be given often and with regularity.

The other cases reported acted very similarly, but were for other diseases of the rectum. The sleep is profound enough, and lasts sufficiently long to do any operation. In none of my operations was there shock either from the whisky or from the operation. It must be borne in mind, however, that such result might occur from using so large an amount of the agent. I think that in cases selected by good judgment whisky can be used in doing these operations, where chloroform or ether is contra-indicated.

Local anæsthesia can be produced in the following manner, and in some cases—as in opening abscesses, cutting off external tumors around the anus, etc.—can be used with benefit, viz.: Use a spray composed of ten parts of chloroform, fifteen parts of ether, and one part of menthol. After one minute's application of the compound spray, complete or nearly complete anæsthesia of the skin and neighboring tissues is produced, and will last from two to six minutes. Dr. Ap Morgan Vance, of this city, in an article commending the ether spray for local anæsthesia, says: "I have found ether the most suitable agent. Rhigoline is more volatile than ether, but is much more inflammable. The method of applying the ether spray is the secret of success. The atomizer with two bulbs is better than the ordinary instrument with one, as with the former the spray is constant. The assistant manipulating the spray must understand the different steps of the operation, especially if it be complicated. The spray is thrown on the part for only a moment, when the knife can be used; continue the spray at intervals or constantly in the incisions, thus making the superficial anæsthesia precede the knife to any desired depth, no pain being felt. The ether

seems to have a hæmostatic effect also, as less blood is noticed than in ordinary cases. The healing process goes on as well as usual, no retarding or other bad effects being noticed in my cases. I have done many tenotomies in adults and children, the patient experiencing absolutely no pain."

The only objection that I have to the ether spray in rectal operations is, that when it comes in contact with the mucous membrane it causes intense burning. In selected cases in this region, where the membrane is not involved, this spray would be of much service. It has the advantage over *cocaine* that no danger attends its use.

Chloroform and Ether.—I do not consider it necessary, nor is it my intention, to enter into any discussion as to the merits that one or the other of these general anæsthetics possesses over the other, but no one subject can be of greater moment to the surgeon than the matter of anæsthetics. That there is risk in giving either chloroform or ether can not be denied, but it becomes the duty of the surgeon to assume that risk. It is a question, then, to him of great importance to decide, if decide he can, which is the safer of the two. There is much difference in opinion, or in practice at least. In the North and East in this country ether is given nearly exclusively. In the South and West chloroform is given the preference. In my own practice I use chloroform most frequently, because the operations do not require much time. If the operation is a prolonged one I usually give ether, not because I think it much safer, but rather to meet the common opinion. Not caring to enter into the *pros* and *cons* of the subject, I believe that it will accomplish much more good to submit the views of one of our most distinguished men on the subject. Dr. H. C. Wood, of Philadelphia, read an able article before the International Medical Congress of Berlin in 1890, entitled An Address on Anæsthesia. The general facts or principles in regard to anæsthesia that he considered as established were :

1. That the use of any anæsthetic is attended with an appreciable risk, and that no care will prevent an occasional loss of life.

2. That chloroform acts much more promptly and much more powerfully than ether, both upon the respiratory centers and the heart.

3. That the action of chloroform is much more persistent and permanent than that of ether.

4. That chloroform is capable of causing death by primarily arresting the respiration, or by primarily stopping the heart, but that commonly both respiration and cardiac functions are abolished at or about the same time.

5. That ether usually acts very much more powerfully upon the respiration than upon the circulation, but that occasionally, and especially when the heart is feeble, ether is capable of acting as a cardiac paralysant, and may produce death by cardiac arrest at a time when the respirations are fully maintained.

6. Chloroform kills, as near as can be made out proportionately, three to five times as frequently as does ether; no doubt because it is more powerful in depressing the heart, but largely because it lets go its hold much less rapidly than does ether when inhalation ceases. Is it not possible that this "holding on" is because it is less volatile than ether, and can we not here get a hint why chloroform is less deadly in the South than in the North?

The rules for treatment of accidents by the agents he concludes:

1. Avoid the use of all drugs except strychnine, digitalis, and ammonia.

2. Give the tincture of digitalis hypodermically.

3. Draw out the tongue and raise up the angle of the jaw, and see that respiration is not mechanically done.

4. Invert the patient briefly and temporarily.

5. Use forced artificial respiration promptly, and in protracted cases external warmth and stimulation of the surface by dry electro-brush, etc., and, above all, remember that some at least, and probably many, of the deaths which have been set down as due to chloroform and ether have been produced by the alcohol which has been given for the relief of the patient.

I do not think that the space allotted here to these considerations of Dr. Wood could have been made to subserve so good a purpose in any other way. Differing from him as I do in some of the non-essentials, I agree fully and unconditionally with him in the essentials. Although I have had administered in my practice ether and chloroform about three thousand times without accident, I never see them given without some fear, and yet surgery can not be pursued without their use.

CHAPTER V.

HÆMORRHOIDS.

Description.—The hæmorrhoidal veins distributed to the lower part of the rectum are very liable to become dilated and varicose—first, from the fact that valves are absent in these veins; second, because of the erect position; and third, because of the peculiar office of the rectum. Now, ordinarily this dilatation or varicose condition is called "hæmorrhoids, or piles." I think that the doctrine that hæmorrhoids are to be defined as *varicosities* of the anal or rectal vessels is wrong. Granting that both dilatation and a varicose condition of the veins of the rectum exist, this does not constitute a hæmorrhoid. The treatment, whether palliative or operative, as laid down for hæmorrhoids proper, could not be properly given. There must be a further pathological change to constitute the hæmorrhoidal affection. That this is the incipient condition, or rather the preceding condition, which tends to and may culminate in hæmorrhoids, is correct, but the full changes which take place should be considered and recognized before this term is used. Because of the distended condition of the veins by blood which by some obstruction is held there, a congestion is induced, and because of the friction to which they are subjected and the retention of the blood in the parts, an inflammatory exudate takes place in the tissues, and a veritable tumor is the result—one that can be seen, is well defined and can be handled, is firm to the touch, and grows by plastic infiltration. When the plexus beneath the mucous membrane within the external sphincter is thus affected, the hæmorrhoids are called *internal*. When the veins outside the muscle are affected, the hæmorrhoids are

said to be *external*. In other words, when hæmorrhoids are inside of the sphincter and protrude at stool, and can be replaced and held within the sphincter muscle, they should be called *internal*. When the tumor is on the *outside* of the sphincter muscle, and can not be pushed inside, or retained if pushed within, it should be called *external*. Now, there is a mixed variety, which is a combination of an internal and external hæmorrhoid. It takes in the verge of the anus, and is partly covered by mucous membrane and partly by true skin. It is well to recognize this classification, for the treatment depends upon it.

External Hæmorrhoids.—I believe all authors distinguish two kinds of external piles: first, a sanguineous tumor; second, a cutaneous outgrowth. The first consists of the enlargement of a piece of skin near the margin of the anus, generally of a rounded form, of a soft feel, and a livid or blue color. Now, this is said to be a coagulum of blood, inclosed in a cyst, or rather in a dilatation of the vein, and that when we cut into it we evacuate this clot of blood. I am constrained to differ with those who insist that this is the condition at the seat of trouble. I am sure that, if the proper dissections are made, these clots of blood will usually be found outside of the vein-wall, not inclosed in a cyst, but lying in the tissues proper. I believe, then, that a rupture of the vein-wall takes place in many of these cases at least, which constitutes this variety of external hæmorrhoids.

Second: The cutaneous outgrowth, or second form of piles, I do not believe to be excrescences, but rather an enlargement of the superfluous tags of skin sometimes found around the anus. In other words, those having a smooth surface around the anus will not have this variety of pile. It is caused by an inflammation of the tag proper, enlarged by the inflammatory deposit. Anything that would act as an irritant in this neighborhood might excite to that condition, and they are designated, along with the other variety, external hæmorrhoids. The affection is a very common one, and, I might add, a very painful one. In so far as the last symptom is concerned, it is

much more decided than in internal hæmorrhoids, for pain in internal piles is not a factor unless they are irritated or ulcerated. Therefore, a person may suffer for many months, or even years, with internal hæmorrhoids and complain of but little pain; but, on the contrary, pain is the first, the most prominent, and generally the only symptom of the external variety. Therefore it is useless and out of place to say to the patient who comes to you for treatment with this form of trouble that he is not suffering with the most important kind of hæmorrhoids. To the patient they are of decidedly more importance than any other form of pile that is met with. I do not believe, as asserted by some, that they are as common as or more common than internal hæmorrhoids. I am sure that I have treated ten cases of the internal variety to one of the external.

As to the causes of the affection, it is very hard to trace them. The sanguineous tumor, I am satisfied, is often produced by straining at stool; but the inflammatory tag, constituting the second variety or external piles, I do not believe is produced in this manner. I do not believe, either, that constipation has as much to do with this trouble as is thought by some. If there is an overloaded condition of the rectum with hardened fæces, a more or less impaction which would prevent the return of venous blood might result in an external pile; but the simple atony of the gut, which oftentimes constitutes constipation, can not, in my opinion, produce it. Pregnancy we know to be a frequent and common cause of the affection, and in this case it is self-evident that it is brought on by pressure upon the venous distribution. Therefore women suffering from a confirmed displacement of the uterus are liable to this disease, and yet we will have persons consult us suffering from one or both forms of external piles who can not state the cause, nor can we find any reason for their existence.

Symptoms.—The symptoms of external or internal piles vary greatly in different subjects. As I have stated, in external piles pain is the predominant symptom, increased on defeca-

tion ; and in the second variety especially, what is to-day a small hypertrophy of a piece of skin, to-morrow amounts to a considerable enlargement. Now, this inflammation seldom goes on to suppuration. If it does, it is best to be on the lookout for a marginal fistula. External piles do not bleed. But if the physician expects to quiet down this inflammatory trouble which constitutes the affection in a few hours or a few days he will be very much mistaken. He will also be greatly deceived if he says to the patient: "Allow me to let this clot of blood out with the lancet, and you will be all right in a short while." It will be found that the knife excites additional inflammatory action, which is about commensurate with the inflammation that is excited and kept up by the clot. It is just about as well to await the absorption of the clot by Nature and not to lance, as to lance and await absorption of the plasma. Therefore, in speaking of the treatment, I shall object to the ordinary manner of dealing with external piles.

External piles, when in a quiescent state, if in this condition they can be called piles, have no symptoms at all. This refers especially to the cutaneous pile due to flaps and tags of skin consisting of permanently hypertrophied folds of integument ; therefore it is only the inflammation of these tags or the blood tumor exciting to inflammation that causes any symptoms at all. When this takes place, as we have said, pain is the first symptom. There is also a feeling of heat and general uneasiness. The part is tender on pressure, and the reflexes are very great. It usually ends by the inflammation subsiding, the absorption of the clot, and the return of the inflamed tag to its natural size. But the patient is disturbed, first, by his own idea that he may be more seriously affected than he is ; secondly, by the pain that he is suffering ; and, thirdly, by his inability to attend to his business with any comfort.

Case.—A distinguished jurist had been in bed for three weeks from the effect of two large inflamed external hæmorrhoids. At the end of this time his physician called me in

consultation, and said that his patient had grown restless for the reason that these tumors would not diminish in size, and that while they existed he could not go to his office. Upon examination, I found one large tumor on each side of the anus. They were fully as large as a small hen's egg, very sensitive to the touch, and greatly inflamed. As this patient was especially pressed for time by his business engagements, I suggested to his physician that we do an operation at once—removing the inflamed growths. I contended that in much less time than it would take to quiet the inflammation by local application, the patient would be well of the wounds that would be made in removing the tumors. The physician consented, and the operation was done. In one week's time this gentleman was able to attend to his business, although it had taken three weeks' treatment prior to this, and yet they had not been reduced in size a particle.

I might go on and cite many such cases, but I will make one suffice, with the declaration that I believe in all such an operation should be done. After repeated attacks of external piles, it will be found that where it has been a blood clot a predisposition has been established, and they are likely to have attacks oftener. If it is a cutaneous pile, repeated inflammations will leave it enlarged ; therefore it is safer in both varieties to remove them rather than to palliate them. External piles are frequently but a symptom of some other disease, such as ulceration, fissure, internal hæmorrhoids, pruritus, etc. Therefore, in operating for this external condition, the other disease or diseases should be eradicated if possible at the same time.

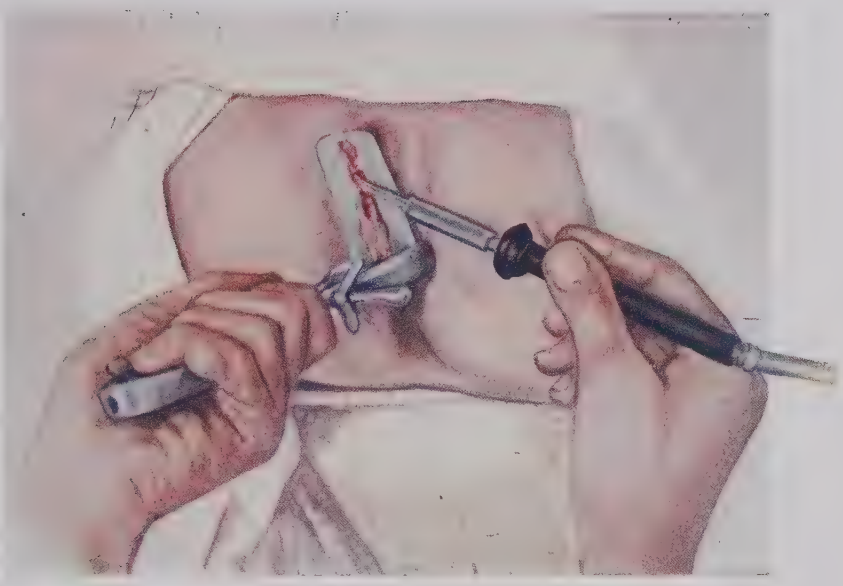
Treatment.—I can not believe with Cripps that "the treatment of external piles is generally a very simple matter, seldom demanding operative interference, which should be avoided if possible."

Although a few cases of simple piles outside of the sphincter do get well in a very short while by local application, rest, etc., a great many cases require constant attention for a considerable length of time. Instead of an operation being sel-

dom demanded, I am satisfied that in nearly every single instance, for the reasons that I have already named, if the patient would consent, it would be best to remove them, and the reasons which Cripps gives for "avoiding an operation, if possible," are to my mind chimerical. He says: "Wounds in the muco-cutaneous surface do not heal so readily as on the mucous membrane, and are apt, without care, to degenerate into an ulcer difficult to heal."

My experience has certainly been that wounds on the mucous membrane around the anus, or in the rectum, are much more difficult to heal than wounds inflicted outside of the sphincter muscle. And although I have removed hundreds of these growths by excision, I have never had the wound to degenerate into an ulcer at all. Authors usually advise that we be very careful not to cut away too much skin in this operation for fear that contraction will follow. Allingham says that you must not make a "clean sweep" of it, but take off a portion only. That which is left will contract in the process of healing. This seems to be the opinion of most men who have written upon the subject, but I must take exception to the doctrine. If there is any one thing more than another that has caused me regret after doing an operation for external hæmorrhoids, it has been that I did not cut away *enough* skin; and although I deal pretty liberally in this matter, I have never yet had any contraction to follow my operations, either for external or internal hæmorrhoids. I dislike the term "snipping off" the inflamed cutaneous excrescences. It does not express enough. I would rather say *cut them off*, or, what would be better, *excise* them. Now to illustrate: We will suppose that the case is one of a large inflamed pile of the cutaneous variety. Instead of "snipping" off this growth, I first throw under it a half grain of the muriate of cocaine, and, waiting for five or ten minutes for its full effect, I catch up the tumor at its very base with a pair of four-pronged forceps. I draw it out firmly, and with a sharp bistoury divide the skin all around it, up to the mucous membrane on each side, then throw a silk ligature

Plate I.



OPERATION FOR HÆMORRHOIDS BY CLAMP AND CAUTERY.

around its base, tie tightly, and cut off the tumor close to the thread. I tie, in cases of this kind, to prevent hæmorrhage, for very often it is excessive. I treat each large growth of a similar character in the same way. Unless the operation be done in this manner, and all of the tags removed, we will find that after the operation these tags, or portions of tags that are left, become enlarged by inflammation, and on the second day are about as large as they were before we did the "snipping," and the other tags, even if they are quiescent, will take on inflammatory action after the inflamed one has been cut away, unless it has been done effectually. Therefore my advice is, in removing external hæmorrhoids, do it not recklessly, but sweepingly. If the variety of pile be that of a sanguineous venous tumor, the operation that is usually done is thus described by Allingham: "Pinch up the tumor gently between the finger and thumb of the left hand, transfix its base with a curved bistoury, and cut out; at the same moment, by pressure with the finger and thumb, the clot may be extruded. Place a piece of fine cotton-wool at the bottom of the sac, and the operation is completed. The pain soon subsides and the patient makes a speedy convalescence. The incision should be made in the direction of the radiating folds of the anus, and this allows more completely of the contraction of the skin."

I know that this is the operation practiced from time immemorial for this variety of external hæmorrhoids; but experience has taught me that there is a better way to deal with them. The pain often continues for a number of days after this operation, caused, first, by the use of the knife, and, secondly, by leaving a portion of tissue that is already inflamed; and, moreover, the amount of inflammation has been increased by the cut. Indeed, I have never noticed a very great difference in time between quieting down these venous tumors by local applications and quieting them after letting out this clot. In lieu of this operation I do one in the following manner: After freezing the parts with a piece of ice, or with a bag of powdered ice and salt, or by the injection of the

muriate of cocaine, as suggested in the other variety, I catch up this blood tumor with the four-pronged forceps by its very base. I then carry my knife completely around it at its bottom, thereby excising it. By so doing I thoroughly eradicate the trouble, and the wound heals without difficulty. Allingham says: "If these sanguineous tumors are not interfered with, the blood in them in time will become absorbed, and they will ultimately form the cutaneous flaps already described." I am not able to disprove this, but I do not believe that this is the usual result. I am opposed to telling the patient suffering from external hæmorrhoids that it is a simple thing, for the reason that if an operation is done for his relief, rest and treatment of the wound are necessary, and I care not how small a wound is inflicted upon the body, under any circumstances, the patient should be advised to keep at rest.

Since the carbolic-acid plan of treatment was begun, many itinerants and quite a number of regular physicians have fallen into the error of injecting external piles. I can not believe that the wildest enthusiast in this plan of treatment ever intended that the plan should be used in *external piles*, for it will be seen at once that although the sloughing process might take place, and the pile be eradicated, the inflammation excited would be great, the pain intense, and ulceration might possibly follow. Therefore, to those inclined to use this method of treatment in the internal variety, I would certainly say, do not extend it to external hæmorrhoids.

The common practice with physicians in dealing with this variety of piles is to use some ointment, and I believe that the reason for so many patients drifting away from the regular physician to the itinerant is because they have received no benefit from such prescriptions. To catch the ear of the common people, these advertisers are in the habit of flaunting before their gaze in the public prints pile salves, etc., that are said to be specifics for the trouble. Fortunes have been made off of such stuff, and it is very rare if any of them ever do much good. I have seen fit to speak of the operative procedure in

external piles before dealing with the palliative just for this reason—viz.: that the ordinary treatment by salves, ointments, pastes, mixtures, etc., has proved of but little avail in preventing or curing this class of affections. I know, too, that the question has been raised whether hæmorrhoids, which include the external variety, should be operated on in the inflamed state. From both theory and practice, I will answer the question in the affirmative. In the first place, they are really not piles until inflamed ; therefore they need no treatment at all. We have shown the great difficulty in reducing the inflammatory action of these growths around the anus. By an operation we remove not only the growth, but also the point of inflammation, and convalescence is hastened. How any harm can result from doing the operation under these circumstances I can not understand, and my practice has taught me that only good follows this treatment, and I am positive in my advice that the operation should not consist in cutting off *one half* or *two thirds* of each prominent projection, but in cutting it *all* off. If one half is left, I am sure that the cicatrization of the wound does not obliterate the remainder. If external piles are complicated with internal, it is my observation that they are usually a part of them, and continuous with them ; therefore, in a word, I would say that external piles, as such, should be cut off at the same time that internal piles are ligated ; but if it be the mixed variety, the operation would differ somewhat, and therefore I will consider it in the chapter on internal hæmorrhoids.

There is no special danger in external piles. They very seldom suppurate, and they never bleed. If they should suppurate, a marginal abscess, and perhaps a small fistula, may result, and sometimes an ulcer ; but I have very seldom seen any of these occur. After I have excised an external hæmorrhoid of either variety I dress it according to antiseptic rules, considering that the operation has been done in this way. I dust the parts with iodoform, then apply the bichloride gauze, over this the surgeon's absorbent cotton, and then a T-bandage. The bowels having been cleared by an aperient and

the rectum washed out by an injection, I confine the bowels for two days, and do not take off the dressing in that time. Then allowing the bowels to move, after a thorough washing with the bichloride solution (1 to 5,000), or a ten-per-cent solution of carbolic acid, I redress the wounds as in the first place. In a very few days they will heal.

We have given the operative treatment for external piles first, because we believe, in the majority of cases, it is better to do the radical operation than to attempt any palliative treatment. I know that this is reversing the order of things as laid down in practice by many authorities, but my experience has taught me that this is the best. Of these palliative treatments, the best, in my opinion, are those which could be more properly called preventives; for, with the simple intimation that one has a tendency to the hæmorrhoidal disease, there is a certain line of treatment which, if pursued, would go very far to prevent this affection. Ordinarily, we mean by palliative treatment that which will allay the symptoms after inflammation has taken place. I believe that it is much better to forewarn one who is disposed to the trouble, so that external hæmorrhoids, as a disease, are prevented.

Usually some ointment is prescribed for the inflamed hæmorrhoids. Chiefest among these is the application of a mixture of belladonna and opium; or some astringent application, as the sulphate of zinc; or acetate of lead in solution, etc. My experience with all such is that their results are negative; for if I had to recommend anything to quiet the inflammatory state, which, as I have said, constitutes the hæmorrhoidal trouble, I would recommend, in lieu of all these, the application of either heat or cold, as far as the reduction of the disease could be accomplished by any local application. But, as I have intimated, the reliance to be placed on such treatment is very little. I think the axiom in surgery that we must rest the part during the inflammatory state—I care not to what part it refers—is of more service than any other injunction, and it applies equally as well to external hæmorrhoids as to anything else. Therefore the

patient should be advised to avoid active exercise. Next to this, the diet should be carefully watched. I am not a firm believer in the doctrine that any special article of diet influences the rectum, and especially external hæmorrhoids, but all such articles of diet that are stimulating—for instance, such things as contain pepper—should be avoided. The same can apply to drinks, and therefore it is best for the patient to avoid either alcohol, beer, or wine during the time that he is affected. It is said that smoking exercises a peculiarly deleterious effect upon external hæmorrhoids. Why this is so I can not quite understand, and yet it is a truth that I have demonstrated in a number of cases. Therefore it is best to advise the patient to leave off his cigars or pipe. Then, as has already been suggested, the application of heat, not only locally but also to the entire body, should be advised. I care not where the local inflammatory action is, after one has taken a hot bath and the blood is more equally distributed, he feels better, freer from pain caused by the inflammation or congestion of the parts. But if heat applied locally does not feel pleasant, then I tell my patients to use a cold application to the parts. Along with this, it is absolutely necessary that the bowels should not become constipated; consequently they should be opened with some pleasant purgative. I believe that an aperient is best under these circumstances. Therefore a Seidlitz powder, or a small dose of Epsom salts, or a glass of Apollinaris water, taken before breakfast, will accomplish the desired result. These not only aid in a general way in keeping the bowels open, but also have a palliative effect. But, besides their administration, that which I rely on most to quiet this local trouble is an injection of cold water, taken once or twice a day during the time that the trouble exists. This answers a twofold purpose: First, it washes out the rectum and prevents any lodgment of fæcal matter; and, second, the cold water coming in contact with the mucous membrane and the blood-vessels of the rectum proper prevents, in a certain degree, the inflammatory condition. Therefore, when a patient consults me for external

piles, the best advice that I can give is to sponge the part often with hot or cold water; to take an injection once or twice a day of cold, not hot, water; and to assume the recumbent position. It has become so common, however, to prescribe some ointment or other local application for external piles, that the patient expects it, and we are really compelled to follow along in this line of treatment. I have already said that I do not believe much in them. When we remember that an external pile is either a hypertrophied piece of skin, or a venous clot under the skin, we can understand that any ointment applied can accomplish very little good, unless it is absorbed, and the skin which covers both these varieties of piles has very little absorbing power, especially for grease. If it is thought best to prescribe a local treatment outside of what I have named, I would suggest the following: If the tumors are much enlarged and inflamed, make the patient go to bed and apply a large, hot flaxseed poultice. Now, in this case, as in all inflamed surfaces, it should be remembered that a small poultice or a cold one accomplishes nothing; therefore the nurse should be instructed to make a very large poultice and to apply it while it is very hot to the inflamed hæmorrhoids. As soon as it is cool, another one should be applied. This does more not only to palliate the distress, but also to eradicate the trouble, than any ointment. After the acute trouble has subsided, the parts are more or less in a relaxed condition, and it is very well to prescribe an astringent solution. The following is a favorite of mine:

℞ Act. plumbi..... ℥ij;
Ext. opium..... ℥j;
Aquæ..... ℨviij. M.

A cloth or a piece of surgeon's cotton, wet with this solution, should be applied frequently to the part. As the trouble begins to disappear, an ointment is of more service, not from any anodyne effect, but rather from its constringing quality. Therefore I would suggest—

℞ Oxide of zinc ointment..... ℨj;
Hydgr. chl. mit..... ℥j. M.

This should be applied often and freely over the surfaces. I know that it is recommended to use the muriate of cocaine in these ointments for local application to external hæmorrhoids, but I have never seen that the agent was sufficiently absorbed to do any good in the way of quieting pain, and, besides this, it is very expensive, and the patients frequently complain of the cost.

As a local application, hamamelis has been highly recommended, and I believe it to be of excellent service. In many affections witch-hazel has acted admirably in my hands, and as a local application in irritable and inflamed piles situated at the margin of the anus, where the remedy could be easily applied, will be found to have but few equals. The part can be bathed in a solution three or four times a day, and a piece of lint dipped in it applied to the anus during the intervals. It makes a most excellent dressing. A person who has had one attack of external hæmorrhoids is very liable to have another; therefore it is best to offer some advice which may go to prevent the affection. I know of nothing better than the ordinary rules of health. He should eat, not sparingly, but of the proper things; for instance, fish, rare beefsteak, well-cooked vegetables, and especially fruit. He should avoid whisky, beer, and ale. If he is an excessive smoker, he should become a moderate smoker, or no smoker at all. He should take a moderate degree of exercise during the day. He should sleep on a mattress, and not on a feather bed. If Nature does not move the bowels regularly, he should aid it by some aperient. Almost any of the mineral waters that are sold on draught at the drug stores in every city can be taken freely. In this section of country, what is known as Blue Lick water, and water from the French Lick Springs or West Baden Springs, in Indiana, meet the indication admirably. Indeed, I have thought that my patients who suffered with a disposition or a predisposition to hæmorrhoids, who sojourned for a few weeks at either one of these springs during the summer, were much benefited in this respect. But these patients should be instructed that any irritant to the

parts, such as printed paper as a detergent, should be avoided; and, above all, that a cold ablution of the parts should be made after every act of defecation. This, together with a cold-water injection once or twice a week into the bowels, will go far toward preventing external hæmorrhoids.

CHAPTER VI.

INTERNAL HÆMORRHOIDS.

INTERNAL hæmorrhoids are of a much more serious nature, in so far as the health of the patient is concerned, than external hæmorrhoids, and yet, if two patients were to come to the surgeon, one suffering from an ordinary attack of external piles, the other with an uncomplicated case of internal piles, the former would give a history of a more serious trouble, at least to him, than the latter would concerning his case; for pain is the predominant symptom in external piles, and pain is scarcely a symptom at all in uncomplicated internal piles, and it is this one symptom that usually causes the patient to consult a surgeon for a hæmorrhoidal disease. Hence we will see the one suffering from external piles early in the attack; but a person will suffer the inconvenience of internal hæmorrhoids, such as protrusion at stool, or perhaps the staining of the linen during the day, etc., for a long time, and will not consult a physician, and it is only when some complication arises—such as ulceration or hæmorrhage, or an inability to return the piles—that he seeks medical advice. We have said that internal hæmorrhoids are the result of a disease of the coats of the blood-vessels which terminate in and beneath the mucous membrane. Now, this venous plexus is situated just within the anus and not as high as either one of the sphincter muscles. There is an opinion, even with physicians, that internal hæmorrhoids are found very high up the bowel. Very often I have had them ask me if they were within reach, and if I could secure them without any trouble, when the truth is that hæmorrhoids proper are never found high up the bowel. This plexus, which becomes dis-

turbed in the hæmorrhoidal disease, lies just above the junction of the mucous membrane with the skin, and when this congestion of the vessels terminates in the inflammatory state, which causes internal hæmorrhoids by plastic exudation, the tumors will be found just within the verge of the anus, and are easy to prolapse. Every surgeon knows that one patient coming to him with internal hæmorrhoids will say that they protrude but slightly at stool; another will say that the protrusion is very great; and yet, when we come to examine the two, we will find that the starting point is the same—namely, in the terminal venous plexus. One protrudes slightly, because the inflammatory action is not well established; in other words, there are no well-defined tumors. The blood-vessels are congested and in a varicose condition; not really, in my opinion, in the hæmorrhoidal state, for I believe hæmorrhoids to be tumors, and not varicosities. Now, where hæmorrhoidal tumors have existed for a long time, the dilatation of the blood-vessels may extend rather high up the bowel, and can be easily seen on the mucous membrane, but this dilatation, or varicose condition, if you please, can not be called hæmorrhoidal. Not until a hypertrophy of tissue, etc., take place can it be called a tumor. When the plexus beneath the mucous membrane within the external sphincter is thus affected, the hæmorrhoids are said to be internal. When the veins beneath the integument outside the muscle enlarge, the hæmorrhoids are said to be external. Because of the contiguity here of the blood-vessels we often have a mixed variety, partly external, partly internal. It is said by some authors that there are three well-marked varieties of internal piles—viz.: the capillary, the venous, and the arterial. I think this division is not only anatomically incorrect, but also misleading. The so-called capillary hæmorrhoid is said to consist of a vascular area of small vessels, situated superficially in the mucous coat, and the venous hæmorrhoid is said to consist of a varicosity of several large veins in the submucous tissue, forming considerable tumors covered by mucous membrane. I have never been able to recognize any dis-

tinction, in an anatomical way, between these two. I am satisfied that both the superficial and the deeper veins are implicated in the trouble; or, in other words, I believe that these forms are but different stages of the same disease. Again, to the student, the term capillary, meaning a smaller variety of pile, is of the least importance; and to him it is really insignificant in its nature, when, in truth, it is the most dangerous of either one of the varieties of internal hæmorrhoids. It is from this small growth that excessive and dangerous hæmorrhage can, and often does occur. It has been my fortune to rescue several lives by recognizing in time a small capillary pile as being the point from which a dangerous hæmorrhage was taking place. Later on I shall narrate a few cases illustrative of this fact. The arterial variety, as described by some authors, consists in tumors in which are found numerous arteries and veins freely anastomosing, tortuous, and sometimes dilated into pouches. They are described as varying in size, sessile or somewhat pedunculated, attaining sometimes very considerable dimensions, glistening or slightly villous on their surface, slippery to the touch, hard and vascular, with an artery often as large as the radial entering their upper part. It is also said that they bleed freely when their surface is touched. Now, I must confess that I have never been able to make out these special characteristics of either one of the varieties of internal piles. From the description given of large venous hæmorrhoids, one would suppose that they were easily recognized, but they are not; having occasionally met with them, I have felt at their upper surface this artery, which is said to belong to this special variety, just as plainly in the venous variety, and I have never seen that they were any more disposed to bleed when touched than either one of the other varieties. But, on the contrary, when I have detected a pile that was glistening, slippery to the touch, and hard to the feel, it had very little disposition to bleed; but it is the spongy pile, which is soft under the finger and easily compressed, which can by friction, such as is excited by hard fæces, etc., be easily torn and bleeds. I think it of more im-

portance to call the attention of the student especially to that variety of hæmorrhoid which is dangerous in itself, and from which can occur, at any time and from the slightest cause, a dangerous hæmorrhage; and that is the small, florid, raspberry-looking tumor, which may not amount to any more than a granular or a little spongy surface upon the mucous membrane. Indeed, when we recall the pathology of hæmorrhoids, we can scarcely call these hæmorrhoids at all. There is no special cell growth, and but little connective tissue in their formation. They are situated higher up than hæmorrhoids are usually found, imbedded in or making a part of the varicose vein, and frequently implicate an arterial branch. So insignificant has this little spongy growth been in several dangerous cases of hæmorrhage to which I have been called, that on opening the rectum with a speculum it could scarcely be seen, and had it not been that an oozing or spurting of blood was detected from the spot, it would have escaped notice. These certainly are not hæmorrhoids proper. It may be a capillary condition, but that which I wish to impress upon the reader is, not to be misled by the classification usually given of hæmorrhoids. I have never yet recognized the so-called *white* piles, as described by Prof. Richet, of Paris. He states that they are merely ordinary piles in a more advanced stage, and consist principally of hypertrophy of the capillary bodies of the mucous membrane. In several instances I have seen hæmorrhoids look more or less white from excessive blanching due to an enormous loss of blood; but this was simply one of the varieties which had been depleted of its blood supply. Others describe *nævoid* piles, which are said to very closely resemble capillary *nævus*. I think that this is simply a synonym for the capillary pile already described. Hamilton, of Dublin, suggests the term *columnar* pile to denote, as he suggests, its pathology, which consists essentially of hypertrophy of the folds of the mucous membrane surrounding the anal opening and pillars of Glisson. I believe this form of hæmorrhoid is simply of the arterial variety. It would certainly simplify matters exceedingly if

we would lessen this division of hæmorrhoids. First, let us say that there is one grand division—viz., *external* hæmorrhoids and *internal* hæmorrhoids; and that internal hæmorrhoids may be either large or small; that when large, they protrude at stool; that when small, they are not apt to protrude at all; that the most dangerous form of internal piles is the small variety, from the fact that they are just beginning their formation. The blood-vessels distending and the mucous membrane being thin, rupture can easily take place and hæmorrhage result. The large variety is not so disposed to bleed, owing to the fact that there is new-formed tissue and that the mucous membrane is thickened. The smaller variety is the most dangerous on this account, but the larger variety is more troublesome outside of hæmorrhage, simply because the piles protrude. They are liable to complications, in that they can become irritated and inflamed and ulcerated. Now, it makes very little difference to the surgeon who is prepared to operate upon a case of internal piles whether they be capillary, venous, arterial, columnar, nævoid, or what not. He is going to operate just in the same manner without making any distinction, unless it be, as I have suggested, that in this little spongy outgrowth upon the mucous membrane, ordinarily called capillary, he may apply a caustic to stop the bleeding and do no operation at all, or it may be that he prefers to catch up this little mass, and, by throwing a silk ligature around it, stop the hæmorrhage. And right here it might be well to consider a subject that has received some attention—i. e., the source of the bleeding. I can not believe with Cripps that it is caused by its being forced as a regurgitant stream through a small rupture in a vein by the powerful pressure of the abdominal muscles; but I believe, and am satisfied in the belief, that the blood comes from the breaking of some arterial branch. I have seen this jet occur so distinctly and so clearly, without any reference to the action of the abdominal muscles, that I was satisfied that it was an arterial stream. Again, the nature and color of the blood evidenced this fact.

Case I.—I was called by a physician to see a lady patient who was suffering from an alarming hæmorrhage from the rectum. She gave no history of rectal disease, but stated that all at once during that afternoon she felt a great desire to go to stool. She recognized that she was passing a large amount, she thought, of a liquid action. In an attempt to rise, she fainted, and it was revealed that she had passed nearly a chamberful of pure blood. The family physician was sent for, and after his arrival another severe hæmorrhage took place. He immediately summoned me. The hæmorrhage was so excessive and the patient in such danger of losing her life that we had no time to search for any bleeding spot, especially as it was night; so we determined at once to tampon the rectum, after which no further bleeding occurred. I am satisfied that this case was caused by the sudden rupture of an artery, perhaps in a so-called capillary pile, and that death would have ensued very soon but for the opportune use of the tampon.

Case II.—On April 24, 1891, I was asked by my friend Dr. Allen to go with him to see a lady who was having some rectal hæmorrhage. He did not put much stress upon it, however, so I did not take my instruments with me. When we reached the house the patient came into the parlor, accompanied by her mother, who gave her some assistance. She was very pale and weak. She told me that for a number of days she had been passing blood at stool, but thought nothing of it. She could give me no idea as to the quantity, but from her appearance I concluded that it must have been more than she estimated, or that she had malignant disease. She grew faint while talking to me, and I asked her to recline on a sofa in the room. I anointed my finger and introduced it into the rectum. The irritation caused by the finger created a desire to pass the contents of the bowel, and before she could rise she evacuated at least a quart of clotted blood. From this loss she fainted. Restoratives were used, but her pulse remained very feeble, her limbs grew cold, she vomited, and a cold sweat was on the

surface of the body. I dispatched the doctor for instruments, etc., and upon his return I again inserted my finger, with the same result as before, except that fully half a gallon passed at this time. The rectum was hurriedly washed out with hot water, and, after I had explained to her the fact that she was in a dangerous condition and must submit to what I was going to do to save her life, I proceeded to tampon. Her condition was such as to contra-indicate the use of an anæsthetic. Having placed the tampon firmly in the rectum, I prepared to leave her in charge of her physician. When I left she was cold and nearly pulseless, she could not speak above a whisper, and said she was dying, which statement I believed. I was forced to leave the city the next day to attend the American Medical Association at Washington, and was gone a week. Upon my return, what was my surprise to hear from her physician that she was making a good recovery. I saw her about one month thereafter, and she had regained her flesh and color and said she had never lost a drop of blood since the day that I tamponed her.

I am sure that the abdominal muscles did not aid in this spurting or jet of blood which caused this woman nearly to lose her life, but, from the history of the case, as in that of Case I, I am certain that it was due to the rupture of a twig of an artery.

Case III.—Dr. I., of this city, a man of apparently good health and strong, robust constitution, had noticed for several weeks that he was growing very anæmic and weak. He could not account for the cause. His habit was to have his bowels move each day at his office in a dark water-closet, where the actions could not be seen. When he consulted me his complexion and general color indicated a man suffering from cancer. He was scarcely able to walk up the steps to my office. He had lost his appetite, had no energy, was dizzy, and had fainted several times. He would go to stool a number of times through the day, would have what he would call a liquid evacuation, and supposed that he was

suffering from diarrhœa. I suggested to him that perhaps he was losing blood at stool. He said that for some time he had had small hæmorrhoids, which protruded somewhat at stool, and that they occasionally bled, which fact was evidenced upon the paper which he used as a detergent. I made him lie upon my table, and an examination revealed the fact that there was a jet of blood to be easily seen when the sphincter muscle was open. Of course this cleared up the case. I had him go home. That afternoon I visited him and tied a small growth in which was this bleeding vessel. No further hæmorrhage occurred, and he slowly but surely recovered his accustomed health and vigor.

I cite these cases to show, first, the danger that attends the capillary variety of internal hæmorrhoids, and, secondly, to describe them as accurately as I can, so as to prove that the blood comes from an artery, and not from a vein. I shall take occasion further on to speak again of hæmorrhage from the rectum, and how to stop it.

Outside of these extreme cases of hæmorrhage from internal piles we frequently meet patients who complain of a small loss of blood, perhaps each day. Some of them are disturbed from the fact that the linen is soiled, or they are made uncomfortable by their condition. Others often ask us the question, "Is this bleeding from hæmorrhoids salutary?" and their question is frequently backed by the statement of the family physician, who has advised them to let it alone, giving as a reason that it is salutary, or that it will not do to stop the bleeding. Such a course of reasoning is, to my mind, fallacious. There may be some exceptions to the rule, but they are certainly very few. Such statements carry us back to the ancient writers, who considered the hæmorrhoidal flux as an emunctory by means of which bile and other acrimonious humors were excreted from the turgid extremities of hæmorrhoidal veins. Now, if to-day, under our enlightened physiology and pathology, we believe that "bile and other acrimonious humors" can be excreted through hæmorrhoids, then, perforce of reason, we must ad-

mit that the bleeding from them is salutary. Hippocrates taught that hæmorrhoids evacuated the "black bile of melancholy humor." If this statement be true, it would be quite a good idea to have some of our patients afflicted with bleeding hæmorrhoids. But to-day we must recognize the fact that hæmorrhoids are *pathological*, and not physiological. It has been said by some able writers that if the hæmorrhoidal flux be stopped, especially when it is habitual, it will produce general disorders. Some have gone so far as to compare this flux to the menses in women, the latter condition being purely a physiological one.

Taking the view from any standpoint, I think it a very erroneous one, and one apt to do much harm, if the doctrine is promulgated. To lose blood from any condition, except it be a physiological one, must of necessity entail upon the patient at least a low vitality. No doubt, where a small amount of blood is lost from one of a full and plethoric habit, no special harm is noticed, but this is no good reason why a person of even that habit should lose the blood. Some have argued that where there has been a constant loss for some time—or, in other words, where it has become habitual—it would be deleterious to stop the flow, simply because it had become a habit. There can be no reason in any such logic. You might just as well say that a man who is habituated to the loss of some blood from the lungs every day should not have it stopped, for the reason that it would do him harm. I am not prepared to deny that in some subjects, especially drinking men of full habit, where the portal circulation is much engorged, the loss of some blood through the hæmorrhoidal tumors may be of benefit. These are exceptional cases, and we are too apt to make an exception a general rule. However, the subject is of sufficient importance to deserve serious consideration. Things that have been handed down to us from antiquity we frequently have a great reverence for, perhaps because of their age or because our forefathers believed in them; and I am inclined to believe that this doctrine that hæmorrhoids are salutary has come down

to us in that good old way. It was taught and believed by the old-time physician that this bleeding not only proved of service in a special way, but also prevented many diseases in a general way. Even Galen said that hæmorrhoids often prevented a commencing atrabilis, or cured it when it was established; and that induration of the spleen, varices, gouty affections, and articular pain were also eradicated in this way. He also asserted that those who were the subjects of hæmorrhoids were much less subject to other diseases. Indeed, you will find this belief so common with most persons that our patients will frequently object to having the hæmorrhage stopped. In this day, when medicine and surgery are based on and practiced from a scientific standpoint, we argue that hæmorrhoids are a disease, and have in this chapter tried to give the pathology. A consideration simply of the causes of the existence of hæmorrhoids should be sufficient to settle all questions as to whether they are a pathological or a physiological condition. But the great danger in teaching any such thing as this is that by the general acceptance of such belief all classes are brought under its evil influence; for instance, the anæmic woman, the debilitated man, children, etc., that can not bear up under the loss of blood, are instructed to believe that it is salutary, and jeopardize their lives. Of course no man learned in medicine would teach his *clientèle* that such was the truth, but one has to practice medicine but a short while to know what a firm hold even superstitious ideas have upon the masses.

Complications.—From the very nature of things, internal hæmorrhoids are frequently complicated with other diseases; indeed, other diseases are frequently the cause of internal hæmorrhoids. As common among these we might mention an enlarged or displaced womb, the pregnant womb, tumors in the abdominal cavity, the diseased and hypertrophied prostate, stricture in the urethra, affections of the bladder, etc. All are common causes of internal hæmorrhoids. So well recognized is this fact that authors frequently say that, unless the other diseases are rectified first, the treatment for

hæmorrhoids will avail nothing. I am not willing to admit this premise, for in many, if not in the majority, of instances where there is a complication the hæmorrhoidal trouble is of the most importance. Allingham says: "In women suffering with a retroverted or anteverted uterus an operation upon piles is very undesirable and will most certainly end in disappointment, unless the uterine complication be attended to at the same time, or, what is better, prior to the operation."

Now, as I have hinted in a former chapter, of all pathological conditions that are difficult to cure, retroverted and anteverted wombs stand high in the list. Of their frequent occurrence I need not speak. If women suffering from one or the other of these conditions consult us for internal hæmorrhoids, which are a source of danger from bleeding, or of inconvenience from protruding, or painful from ulceration, we do an injustice to the woman not to relieve her of that trouble which gives her the most distress. Even admitting that the cause for her hæmorrhoids was the retroverted or anteverted uterus, and that if the cause was not removed the hæmorrhoids would return, we would argue that for a time at least, and for a very long time perhaps, we should give her a surcease from her hæmorrhoidal affliction ; and if by that time the womb had not been brought into proper place, and the hæmorrhoids should reappear, to operate the second time would do her no serious harm. Therefore I must differ from the distinguished author, and say that my experience warrants me in operating upon the hæmorrhoids first, and referring her to the gynæcologist afterward. Allingham states further on that he has found that the wounds do not commonly heal, and that a very painful and unhealthy ulceration sometimes follows the operation ; and even if the wounds did heal, there was but little relief afforded. This has certainly not been my experience. I admit that in some cases the woman has said that she still had the bearing-down sensation that existed before the operation was done to remove her piles, but we must remember that that was not all of her

trouble. If the hæmorrhoids protruded before the operation, they did not protrude after it. If they were ulcerated, the ulcerated tumor was removed. If pain was excited at defecation, the pain has been stopped. I do not remember to have ever seen an ulceration established that would not heal after the operation under circumstances like these. To show the good effect to be had in these cases, I will make it suffice to cite only one case, but it is a sample of many in my practice :

Case.—Mrs. G., living eight miles from the city, was a great sufferer from protruding internal hæmorrhoids. Upon one occasion they became very much enlarged by inflammation, protruded from the bowel, and the patient was unable to return them. She was in such dreadful pain that her family physician sent to this city for my friend, Dr. Frank C. Wilson, as a consultant. Upon arriving at the house, Dr. Wilson found this angry mass protruding, greatly inflamed and ulcerated. He suggested to the physician that an anæsthetic be given, and the mass be returned within the bowel. This was done, but Dr. Wilson informed me that he had not got further than the gate when a messenger told him that the hæmorrhoids had come out again. She was then advised to come to the city and have me operate. This she did. Upon my first visit to her I questioned her closely about her general health and any special complication that might exist along with the hæmorrhoids. She told me that she had womb disease, which included a displacement ; that she had been under treatment for it, and that just so soon as she recovered from this operation she expected to go under the treatment of Dr. Scott for the trouble. On the second visit I did the operation, Dr. Scott accompanying me and administering the anæsthetic. He corroborated what the woman had said. As she recovered from the operation for hæmorrhoids she grew to feel so exceedingly well that she deferred the treatment for her womb, and has expressed herself ever since as feeling like a new woman.

I believe that this case speaks for itself. Here was a

woman incapacitated for either work or pleasure, with a co-existing uterine disease and a serious hæmorrhoidal trouble. Although we recognized the womb complication, we did the operation for hæmorrhoids first, and relieved her of the protrusion, of the inconvenience, and of the pain. Perhaps she has to-day the bearing-down sensation caused by a displaced womb. Suppose we had known at the time that she would have it, was that any reason why the operation should not have been performed?

I believe that where we have a complication of hæmorrhoids with urethral stricture it is of more importance to relieve the stricture than to relieve the displaced womb in the woman. It has been my misfortune in dealing with a great many to find that this form of trouble was a very serious complication of hæmorrhoids. Another serious condition of affairs is the enlarged prostate in men suffering from internal hæmorrhoids. That straining effort that the prostate produces or superinduces has a baneful effect upon the hæmorrhoidal affection. This, of course, is more likely to occur in old men, as the hypertrophied prostate is the bane of old age. And yet a radical relief can be afforded these people sometimes by relieving them of their hæmorrhoidal trouble.

Case.—Mr. H. B., aged seventy-three, living in a small town in the interior of the State, had suffered for a long time from the effects of an enlarged prostate. In conjunction with this he had three or four well-developed internal hæmorrhoids, which frequently became inflamed. Upon one occasion, when he was suffering both with his prostate and inflamed piles, and was unable to have his bladder act, his physician telegraphed for me. I went out; I found him to be rather a robust man for his age. Upon examination, the prostate proved to be very much hypertrophied. His piles were partially protruding and very sensitive. The urine had to be drawn every hour or two with a catheter. I argued that these hæmorrhoids, which were frequently in a state of inflammation, kept up this irritation of the prostate, and I advised an operation for their removal. This was done, and some weeks

thereafter his doctor wrote me that he was in a much better condition, and expressed himself as greatly relieved.

Of course, internal hæmorrhoids can be complicated with other diseases of the rectum proper, such as an irritable ulcer, fissure, polypus, etc. When an operation is done for piles, the other should be attended to, if possible, at the same time. Internal hæmorrhoids frequently become strangulated, and gangrene takes place. This is usually on account of an irritable sphincter, which may be rendered so by an abrasion, fissure, or something of the sort. It will be found that the patient has made many efforts to replace them but has failed. Under these circumstances they are exceedingly sensitive to the touch, and the patient resists any attempt at an examination or to force them back. If, under these circumstances, they are not returned within the sphincter, gangrene may be the result. There are a few cases reported where a slough of the entire hæmorrhoidal mass has taken place, and a spontaneous cure has been produced. Of course, this is a dangerous thing to occur, in that a fatal hæmorrhage might be the result. In cases like these it is said that the treatment must be either temporary or radical. I must certainly dissent from any effort at an attempted palliation or temporary treatment under circumstances like these. In the first place, if the inflamed hæmorrhoidal mass which has been strangulated is returned within the sphincter muscle, it will not remain there. In the second place, if it has become gangrenous it is a dangerous thing to allow it to remain there, for septic infection might rapidly take place. The only question to be considered is whether we are justified in operating upon internal hæmorrhoids when they are inflamed. Now, even if we are to admit that, as a rule, it would be safer not to do so, these are certainly exceptional cases and call for radical relief; but being of the opinion, as I am, that the results are just as good in operating upon hæmorrhoids in the inflamed state as when they are not inflamed, it is my practice to advise an operation. And where the piles have become strangulated and are disposed to mortify, no delay should occur. The operation

should be done at once. Think of the condition of affairs if this inflamed hæmorrhoidal mass is pushed back within the rectum, even if it will remain there; and what a difficult thing it would be to quiet down said inflammation, to say nothing of all the pain or distress that the patient suffers.

Case I.—Mr. N., living in the western portion of the city, had his piles to protrude, and made a number of efforts to reduce them, but could not. He concluded that they would reduce themselves after a while, and therefore contented himself with remaining at home, resting in the recumbent position most of the time. During the day he would take a number of drinks of whisky; I suppose the amount tended, more or less, to quiet his pain. After the lapse of a week I was sent for, and he stated that, although they had not been reduced at all, the pain was not so great as it was for the first few days. On making an examination, I found what I took to be the cause of the diminution of pain—namely, that fully one half of the mass was in a state of gangrene. I advised an immediate operation. The patient was put under chloroform, and I removed the entire mass. This man made a perfect and uninterrupted recovery.

Case II.—A young man from the country came to this city for the purpose of selling his tobacco. He was in the habit of getting on periodical drunks. One afternoon he disappeared from the hotel and could not be found by his father, who was searching for him during the evening and that night. The next morning one of the servants at the hotel reported that a man was in the water-closet, he thought, in a dying condition. It was ascertained that it was this gentleman, who had come in during the night, had gone to the water-closet, and in the act of defecating the hæmorrhoids had protruded. He, being dead drunk, sat there all night. I was sent for the next morning, and upon examining him I found a mass on the outside of the sphincter as large as my fist. It was exquisitely painful, and he was in such a nervous condition from drink and pain that I thought he would be attacked with delirium tremens. I made no effort to reduce this mass, because I

thought everything indicated an operation. An assistant was called, and I removed it. For seven or eight days he did exceedingly well, but about this time he complained to me of an inability to open his mouth wide, and also that he swallowed with difficulty. I immediately suspected that this man had tetanus. I placed him at once upon the bromide treatment, giving enormous doses until full bromism was reached. For a number of days the symptoms progressed until he could scarcely open his mouth at all. He also had pains in the muscles of the chest and back, and a disposition to decided opisthotonus. He was still held, however, under the bromide, alternating occasionally with hydrate of chloral. During the time, Dr. D. W. Yandell was called in consultation, and concurred in the treatment, and it was kept up. I do not remember the amount of bromide of potassium that this man took daily, but it was enormous. After the tenth or eleventh day the symptoms began to disappear, and the man made a good recovery.

I have no doubt that the tetanus supervened upon this man's debauch, and was caused by it.

Symptoms.—Internal hæmorrhoids that do not protrude and do not bleed have few, if any, positive symptoms. Indeed, it is very seldom that a physician is called upon to prescribe for internal hæmorrhoidal trouble where one or the other of these symptoms does not exist. It is true that in the rectum this varicose condition of the veins may exist, which predisposes to hæmorrhoids, and often gives some intimation, by reflex action at least, of such condition. But we are not apt to see them in this stage. As has been stated, patients call almost any affection of the rectum or anus piles, and therefore it is left to the physician, after all, to make a diagnosis. The first symptom of importance is *hæmorrhage*, and we know that the smallest and most insignificant pile is often accompanied by this symptom; and when we add that capillary piles seldom protrude, we are compelled to make an examination with the speculum to ascertain whence the blood comes. The next important symptom is protrusion at

stool. The patient will say that during the act of defecation he has noticed that his bowel comes down, but that upon assuming the erect position it goes back again. As time goes on, or if we see the patient at a later period of the hæmorrhoidal trouble, he will say that the piles protrude at stool, and that, although formerly they went back of their own accord, now he is compelled to push them back after each act of defecation. Right here I wish again to call to mind that very many patients are in the habit of pushing into the bowel the superfluous amount of skin which is found on the outside of the anus, whether in an inflamed condition or not. This practice should be deprecated, for it is the cause of much trouble. Time and again I have had to repeat to patients the advice that they must not do this. While writing this chapter I have under observation a young man upon whom I have operated for a severe ulceration at the margin of the anus, caused by his daily attempt to push back his hæmorrhoids into the rectum; and this was done by the advice of his physician. He had in reality no internal hæmorrhoids at all, but there were on the outside two large tags of skin which, by his constant attempt to reduce, had not only become inflamed themselves, but also had ulcerated the outlet of the rectum. At the same time that I divulsed his sphincter I removed his external piles, and he is now nearly well. I have known aged persons to say that they have suffered with protruding piles nearly all their lives, and suffered nothing more than the inconvenience of putting them back. Now, one would think that this inconvenience would have been of sufficient importance to the patient to have had them removed, but usually they have refused to do so upon a false idea that the piles were salutary, or that it was dangerous to have them operated upon. By other persons, after the existence of protruding piles for comparatively a short time, excessive pain is experienced in replacing them, and they seek the advice of a physician. When patients come to me complaining of hæmorrhoids, among the first questions that I ask are these: "Do your piles protrude at stool? Do you

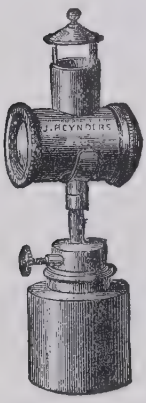
suffer any pain?" If they give a history of protrusion without pain, then we have a pretty clear idea of an uncomplicated case of piles. If they complain of pain with the protrusion or after it, then we know that we have a complicated case of piles. Internal hæmorrhoids *per se* do not cause pain upon protrusion. If pain exists, an abrasion, fissure, or ulceration coexists. Frequently the patient suffering from internal hæmorrhoids will tell you that he discharges a good deal of mucus; sometimes this accompanies the natural evacuation, sometimes it passes alone. With a very neat person the staining of the linen will be of sufficient importance to make him consult you for relief. Patients suffering from this form of trouble will tell you that, although the bowels move freely, afterward they feel as if there were more of the fæcal mass in the bowel that should be passed. No doubt this is caused by the hæmorrhoids acting as a foreign body in the rectum. There is usually some sympathetic action with the bladder, and if much irritation of the hæmorrhoids exists, they will tell you that micturition takes place oftener than is natural. The reflexes may induce such symptoms as pain in the back and down the thighs, and with sensitive natures there is more or less a disturbance of the whole nervous system. Many patients suffering from internal hæmorrhoids imagine that they have malignant disease, and it is a very difficult matter to persuade them that they have not, unless an operation is done which results in their entire recovery. In old-standing cases of hæmorrhoids, especially in the aged, there is a relaxed condition of the sphincter muscle, and a disposition of the hæmorrhoids to remain protruded. But it has been my observation that where persons have attained to old age and have suffered from protruding hæmorrhoids for many years, there is an atrophy of the tumors, and they will tell you that, although they suffered during their past life with the trouble, that now it causes them very little inconvenience.

Diagnosis.—An examination should be made of every patient who comes to you complaining of rectal trouble, and I

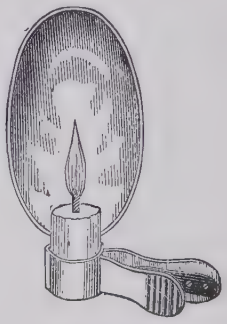
wish to enforce the suggestion that nobody's diagnosis is to be taken, but that it should be made out after careful study and examination of the patient. The history that will be narrated will sometimes give us a very good idea in forming an opinion of the existence of internal hæmorrhoids, but very often we can not rely upon what the patient says about it. It is a very common thing that they are impressed with the idea that growths on the outside of the rectum have come down and properly belong inside. Besides this, although they give a clear history of protrusion at stool, it may be a polypus that has protruded, and the patient is not supposed to know the difference. In one or two instances it has been my misfortune to have patients complain of protruding piles when that which protruded was a portion of a malignant growth. Again, it is very natural for a patient to suppose that a prolapse of the gut proper is a case of internal piles. So I repeat that an examination should be made in each and all of these cases. Hæmorrhoids, being veritable tumors, can be seen, but in the quiescent state can not be felt when within the rectum ; therefore, in order to see them, we must practice one of two means which are at our disposal. First, we must have the patient take an enema, and when the water passes away, he is directed to strain down, and these tumors protrude and can then be seen. But too much reliance should not be placed upon this method. It is very much like the person's going to the dentist to have a tooth extracted ; when he arrives there all pain may have departed. Many of my patients tell me, after taking an enema and "straining down," if but very little of the growth protrudes, that it isn't half as large, or perhaps one third as large, as it is ordinarily. Indeed, I have known patients who suffered with a well-pronounced case of internal piles, after taking an enema, especially of tepid water, and making the effort I have named, to have no protrusion at all. I account for this by the fact that the water has washed away any discharge or accumulated fæces, and it had passed easily, and even the straining effort would not bring them out. So if we

relied upon this method exclusively, we should be unable to make a diagnosis.

Second, the next best plan is to have the patient wash out his bowel before you see him. Then, placing him on the table in the Sims position, by the aid of a good natural light, or an artificial light, as has been described in the chapter on "examination of the rectum," we anoint a speculum (a tri-valve or a four-valve is the best), introduce it into the rectum, and gradually open it to its full extent. The piles will be seen falling in between the blades. A very good plan which answers well, especially in the case of women, is to put them in the position named, and anoint the finger and slip it into the rectum, which accustoms the sphincter to its presence. Then, by gradually drawing apart the anus and telling the patient to strain down, enough of the hæmorrhoidal tumor or tumors can be seen to make a diagnosis. The physician who relies upon forming a correct opinion as to the existence of internal hæmorrhoids by the *touch* inside the sphincter will be often msitaken. It is a matter of some concern what we use as a lubricant for our finger and instruments. Soap and water will do very well for the gynæcologist, but it answers a very poor service to the rectal surgeon. In the first place, it is a very bad lubricant at best, and, secondly, it stings from the effect upon the mucous membrane. Some of the very best lubricants are lard, or butter without salt, or vaseline ; all of these are preferable to any oil, because they are more tenacious. Suppose, then, that there is a protrusion in answer to the straining-down effort of the patient. As I have said, this may be one of three things, ruling out external hæmorrhoids, which I take it for granted can be easily diagnosticated: first, internal hæmorrhoids ; second, prolapsus of the gut;



Collin's lamp.


Candle holder with reflector.

third, polypi. If it be hæmorrhoidal, they can be felt as well as seen. They can be circumscribed by the finger, and feel to be more or less solid as tumors. They can be defined and counted. If it be prolapsus, a protrusion is likely to exist all around the anus. It hasn't the appearance of internal hæmorrhoids, in that it is of a brighter or scarlet color, whereas the hæmorrhoids are of a dark, venous color. It does not evidence to the feel the same sensation as internal hæmorrhoids. It is soft and velvety, giving the sensation of a wet bladder pressed together with the fingers. If it be a polypus, although the protruding part may look very much like a pile, it will be found that it has a pedicle. Therefore, in my opinion, internal hæmorrhoids can be easily diagnosticated.

Treatment. — The treatment of internal hæmorrhoids can best be considered under two heads: first, palliative treatment; second, radical cure by operation. I sometimes think that authors make a mistake in devoting so much time to the palliative treatment of internal hæmorrhoids. If this disease actually exists, palliative treatment will not cure it; and to soothe the patient into the belief that he is being benefited or cured by such treatment is doing him an injustice. Where the hæmorrhoidal disease exists, with the pathology as named in this chapter, I do not believe it can be cured in any other way than by operative proceedings. It is this very method that we are objecting to, either in the hands of the charlatan or by the dictation of druggists, or possibly of old women, who are in the habit of prescribing infallible cures for piles in the way of salves, ointments, lotions, etc. Indeed, the whole effort of the quack seems to be to persuade these people that they can be cured "without the use of the knife, clamp, ligature, or cautery." From a surgical standpoint we know how erroneous this is, and yet there are persons that will submit to having a tumor—say of the breast—removed by daily application of a painful caustic, which it will take weeks or months to do, when a cure could be effected in one tenth of the time by a clean incision by the knife. So it is

with these cases. The hæmorrhoidal tumor can be removed by an operation in a few minutes, and the cure is a radical one; and yet, by an education in a false theory, these patients undergo treatment from the itinerant for weeks, months, and perhaps years, without having the end accomplished. When we say palliative treatment for internal hæmorrhoids, we mean *palliative* and not curative; and, therefore, we should say to the patient: "I can palliate your disease by certain means, but I can not cure it." But recognizing the fact that there are many persons, especially business men and women, who perhaps can not spare the time to be operated on, we must give them some treatment. Therefore this will form my excuse for mentioning it. First of all, then, I would inquire into the patient's habits. If he is a drinking man, his allowance of alcohol must be cut off or limited, and if the effect of drink has shown itself upon the liver, it must be looked after. With his agreement to stop the stimulant, if not for all time, for a short time at least, I would have him drink freely of some one of the mineral waters. About the best is the Carlsbad. This should be taken first for its free purgative effect, and for its saline effect afterward. Then I am in the habit of prescribing for these men the following:

℞ Tincture of cinchona,
Tincture of gentian..... āā ℥iv;
Hydrarg. bichlor..... gr. ij.

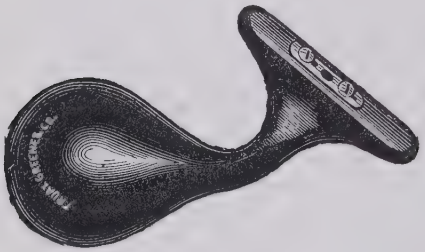
M. Sig.: Teaspoonful three times a day before eating.

This preparation is not only a good tonic, but the mercury has a beneficial effect upon the liver. These people are usually heavy eaters, and therefore they should be enjoined to restrict their diet to common nutritious food, eating often of fruit and taking their meals with regularity. I have known these patients to be greatly benefited by taking each night at bed-time a lemon squeezed into a glass of hot or cold water. The diet should be looked after with all classes of patients. Women, especially, are in the habit of eating sweetmeats to excess. These should be interdicted, and a good nourishing diet substituted.

In regard to this special injunction relating to diet, Brodie has given such admirable suggestions that I beg leave to quote him: "Is the patient a great eater, pampering his appetite with a great variety of dishes and thus exciting himself to swallow more food than the stomach can readily digest? Let him make his dinner on a single dish, and eat of that in moderate quantity. Let him avoid undressed vegetables, especially those which are acid or acescent, as salads, oranges, and apples. Does he commit excesses in drinking? Let him leave off fermented liquors altogether, or take them only in small quantities; and, in particular, let him avoid such fermented liquors as from the sugar which remains unfermented in them are liable to become acid in the stomach, or which are acid altogether. The French light wines are injurious in these cases, especially champagne. So are also all varieties of malt liquor, from Burton ale down to home-brewed beer; but none of these liquors are worse than our old-fashioned English liquor called punch. If your patient has been in the habit of dining late in the evening, and of going to bed soon after a hearty meal, he should alter his habits in this respect, dining sufficiently early to allow his food to be digested before he retires to rest. If he has led a sedentary life, he should cease to do so, walking or riding daily, so as to induce perspiration. A person who takes a good deal of exercise may take liberties as to diet which he could not otherwise take with impunity."

Outside of any benefit that might accrue to the patient suffering from hæmorrhoids, these suggestions of Brodie constitute a splendid moral lesson that would be of service to all mankind if followed. I fear the American would be averse to such precautions, simply for their salutary effect. There is one article of diet which is commonly supposed to be of great benefit to persons suffering from any form of rectal trouble, from constipation to hæmorrhoids. I refer to oatmeal. Many authorities impress upon us the necessity of such a diet in certain diseases of the intestines. My experience with this article of food has been that it does more

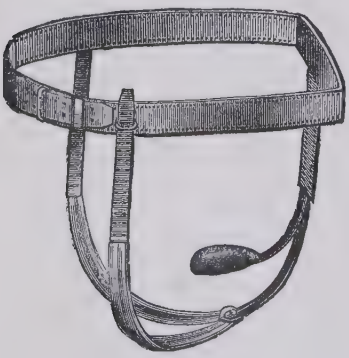
harm than good. In the chapter on diseases of the sigmoid flexure I recite a case where death resulted from an impaction, or I should speak more correctly if I were to say by an agglutination, in the sigmoid flexure, caused by the too free use of oatmeal. We can not do better than tell the patient to eat good, digestible, wholesome food, letting all pastry and other sweetmeats alone; to observe regular habits as far as possible; to avoid constipation; to take a good deal of exercise in the open air—at least not to follow a sedentary life; and to partake sparingly of the stimulants, especially alcohol. This is about all that they will do, and it will be a very difficult matter to get them to do even this.



Trousseau's pile supporter.

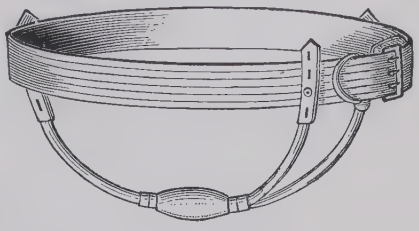
Local Applications.—Under the head of local applications many things could be mentioned, but very few of them do any good. I would advise the patient suffering from a disposition to internal hæmorrhoids to see to it that no constipation existed. To prevent this form of trouble I would refer my readers to the chapter on constipation. Outside of all general rules relating to that subject, and coming more directly to the preventive treatment of internal hæmorrhoids—for that is a better term to use than palliative—I would advise the patient to wash the bowel out at least three times a week with a large cold-water injection, unless there was some special reason why it should not be done. In addition to this, I would urge him not to use any form of paper or other substance

Metal pile plug.

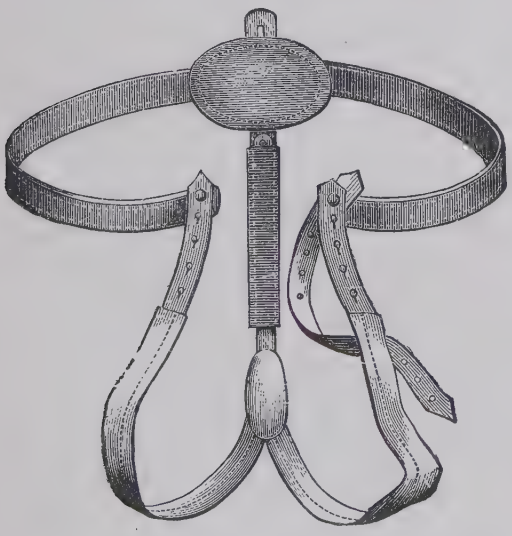


Prolapsus ani supporter.

as a detergent, but, instead, to practice the use of a cold-water ablution of the parts after each act of defecation. I believe cold water applied to the inside of the rectum, and outside of it, to be the best agent either to prevent the hæmorrhoidal disease or to palliate it when it exists. Its astringent effect upon the muscular structure of the bowel and blood-vessels can not be denied. It might be said that after the astringent effect we would have a reaction and a greater dilatation of the blood-vessels; but this assertion might be made in regard to the application of cold to inflamed surfaces generally, and yet we know of what service cold is in many ways in cases of inflammation. Van Buren believed that it was best to throw up three quarters of a pint of tepid water, with a view to bringing the motions away; then, after the motion, to inject four ounces of quite cold water, which can be either retained or passed out in a few minutes. I have had a better effect from throwing a larger quantity of water in, say from a pint to two pints of cold water at a time. This not only breaks down and washes out the fæcal matter, but acts at the same time as an astringent to the parts. All instruments devised for the purpose of keeping the hæmorrhoids up in the rectum, after they are reduced, have proved utterly worthless



Pile supporter elastic.



Pile supporter elastic.

in my hands. The best, however, are the ones illustrated. Cripps recommends, in such cases, a daily passage of a full-sized conical bougie up the bowel immediately after the motions, and that it should be kept in for a few minutes. He does not state for what purpose this is done, but it occurs to me that this would be adding fuel to the flame. The sphincter muscle is likely already irritated, and even if it has not sufficient action, I can not understand how the introduction of the finger can establish it. We are often forced to prescribe some treatment for hæmorrhoids that are prolapsed in an inflamed state. The usual method is to give a prescription of some form of opiate as an ointment, generally of powdered opium and belladonna. A favorite prescription with Allingham is the following:

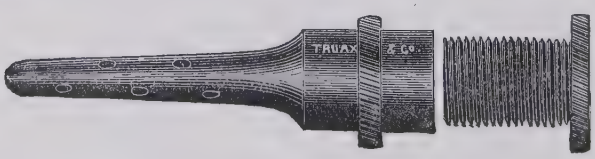
℞ Ext. belladonnæ..... ʒj;
Ext. hyoscyami..... ʒij;
Ext. conii..... ʒij;
Vaseline ..... ℥j. M.

This is applied on a piece of lint or rubbed over the parts. A better formula, to my mind, is—

℞ Mur. cocaine..... gr. xij;
Iodoform ..... ʒj;
Ext. opium..... ʒss.;
Vaseline..... ℥j. M.

These can be used through pile-pipe, if thought best, or applied locally.

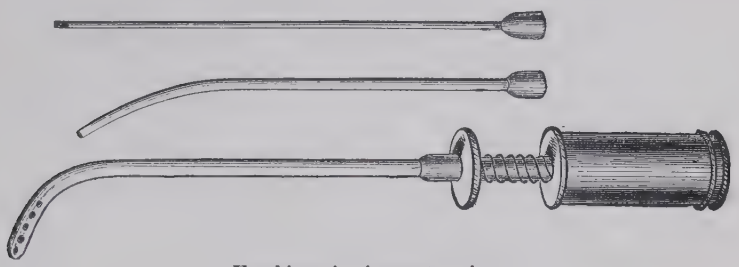
I must confess, however, that I have very little faith in such local applications either quieting the inflammation in



Hard rubber pile-pipe.

the hæmorrhoidal tumor or quieting pain by being absorbed. I am satisfied that the absorbing power of an inflamed hæmorrhoid is very feeble, to say the least of it. A better plan, I

think, as far as palliation goes, if the hæmorrhoids are protruded and can not be returned, is to put a large hot flaxseed poultice over them and to have it frequently changed and the patient kept at perfect rest. If the hæmorrhoids can be reduced, then we get a quicker and more perfect effect by giv-



Hutchinson's ointment syringe.

ing a hypodermic injection of morphine. But, in lieu of all this, a much better plan of treatment for protruded inflamed piles is to suggest an immediate operation for their removal. I have practiced it many times, and I have never yet had to regret it. Indeed, I think it more necessary to operate upon inflamed internal piles than to operate upon those that are not inflamed.

Operations for Internal Hæmorrhoids.—After we have determined to operate for internal hæmorrhoids, it is best to give the patient a little preparatory treatment before the operation. If I suspect, or am told, that the patient is a drinking man, I administer for a couple of nights a dose of calomel, say two or three grains each night, or, what is better, give this amount in reduced doses, say one fifth of a grain, taken every hour until three or four grains are taken. I then have the patient take a large dose of sulphate of magnesia the day before doing the operation. The night before, I have a large enema of hot water thrown into the rectum, to wash it out. Early the next morning I have it repeated. If the patient is to take an anæsthetic, of course he should do without the meal which precedes the operation. It is a bad habit to operate upon patients who come from a distance on the day of their arrival. They are fatigued, perhaps, with the jour-

ney, and out of sorts in a general way; besides this, you have not sufficient time to unload the bowels, as directed. Very many patients insist upon this early operation to save time, but the surgeon should consider not only his patient's welfare, but also his own reputation, in doing surgical operations. We are to suppose, then, that the patient has been prepared for the operation, as suggested in the chapter on antiseptics in rectal surgery. Presuming that he has been given a bath, and that everything concerned in and about the operation is aseptic, we are to proceed. The favorite position with me is: the patient lying on his *left* side, at the edge of the operating-table, with the knees well drawn up, and his left arm drawn from under him. One assistant should stand at the patient's head in giving chloroform, and not at the side, for the reason that he is in the way. Another assistant should stand in front of the patient, to assist in controlling the parts. The nurse should be prepared to handle the instruments, sponges, irrigator, etc. If a surgeon attempts to do an operation for internal hæmorrhoids with no one present but the physician who gives the anæsthetic and himself, he will find that he will do an awkward operation.

Methods.—There are *thirteen* recognized operations for internal hæmorrhoids. Having very little confidence in some of them, I shall not take the time to speak of how they are done. Really, there are but two operations that claim much attention from surgeons who are in the habit of doing these operations: 1. The ligature. 2. The clamp and cautery.

As I desire to pay my respects to a few other methods, I will consider the following operations that are practiced for internal hæmorrhoids: 1. Injections of carbolic acid. 2. Crushing. 3. Clamp and cautery. 4. Excision. 5. Dilatation of the sphincter muscles. 6. Whitehead's operation. 7. Ligature.

Injections of Carbolic Acid.—As we are greatly indebted to Dr. Edmund Andrews for an *exposé* of this method of treatment, which originated with the itinerants, I shall take the liberty of quoting him freely, and afterward of giving

my own opinion. In his work on Rectal and Anal Surgery, published in 1888, he has this to say of the origin of this method of treatment: "In the year 1871 there lived in the village of Clinton, near Jacksonville, Ill., a young physician named Mitchell. His practice was small, and afforded him superabundant leisure, which he employed in devising a new treatment for piles. Being a good thinker, he soon conceived the idea of treating hæmorrhoids by the hypodermic injection of a mixture of olive oil and carbolic acid. Having tried his plan upon an old farmer of the neighborhood, he accomplished a triumphant cure. The old farmer was delighted and garrulous, and the young doctor was needy, but ambitious. The two made a sort of partnership, the old farmer attending to the advertising, while the young doctor received the patients and punctured their piles (and their pockets) with his little hypodermic syringe. Knowledge of their method spread. Certain itinerants began to sell the secret to others, pledging them to secrecy in turn, and binding each to practice only in the district for which he had purchased the 'right.' Two men in Chicago are said to have paid three thousand dollars for the exclusive secret right to a certain portion of Illinois, including their city. Flocks of itinerants bought the secret and traversed the country in every direction until their handbills fluttered on the shores of the Pacific Ocean. In the year 1876 one of the quacks revealed to us his method, and, by taking measures adapted to the purpose, we found that he had informed us correctly. We then entered into correspondence with a considerable number of the itinerants, some of whom proved willing to make a clean breast. We also communicated with a large number of regular physicians who had observed the practice of the itinerants, and in some cases had made use of the method themselves. In the course of this investigation we received about three hundred letters, and got rough estimates of the results of the injections in about 3,300 cases. Mitchell commenced with a mixture of one part of carbolic acid and two parts of olive oil, but he gradually varied from his first method, and at length

partly abandoned the injection and adopted the plan of tearing the interior of the piles to pieces by means of angular needles set in handles. He probably met with some of the dangerous accidents which have occurred in the injecting practice, and changed to the needles on that account."

Dr. Andrews reports the following accidents which were reported to him out of 3,304 cases: Deaths, 13; embolism of liver, 8; sudden and dangerous prostration, 1; abscess of liver, 1; dangerous hæmorrhage, 10; permanent impotence, 1; stricture of the rectum, 2; violent pain, 83; carbolic-acid poisoning, 1; failure to cure, 19; severe inflammation, 10; sloughing and other accidents, 35.

Now, when it is considered that this evidence is given by the itinerant himself, who would be disposed to report his successes, but not his failures, and again that these men know no surgery or pathology, this is very poor evidence indeed. Statistics are poor at best, but when gathered from such sources as these they amount to but little, so far as the danger of the treatment is concerned. But the profession is greatly indebted to Dr. Andrews for his exposure of these men and their plans. Shortly after this method of treatment became known to the profession I took occasion to use it in forty cases of internal hæmorrhoids, and in an article read before the Kentucky State Medical Society, in 1878, I gave my experience with the agent. Allingham, in his work on Diseases of the Rectum, page 120, refers to my report in the following words: "Dr. Mathews, of Louisville, has kindly sent me his pamphlet, read before the Kentucky State Medical Society in 1878, and in that paper he endeavors to show that the injection of the acid into a pile is painful and inefficient, and that death is to be feared (*a*) from peritonitis, (*b*) from embolism, and (*c*) from pyæmia (*sepsis*). In support of his assertion, he relates a case under the care of another practitioner, where in twelve hours violent inflammation followed but the piles were not cured, for in twenty days after the injection one tumor had to be removed by ligature. He also cites another case of peritoneal inflammation, and says

embolism and pyæmia have been known to result from injecting nævi with solution of iron, and deaths have occurred from injecting internal hæmorrhoids with carbolic acid. For my own part, I am much inclined to agree with the opinion of Dr. Mathews. I have tried the injecting plan in many cases, but the result was generally much pain, more inflammation than was desirable, a lengthy treatment, and the result doubtful; certainly not a radical cure, for it must be borne in mind that though the injection of carbolic acid into the interior of piles may, in some instances, stop the bleeding for a time, yet it can not, and does not in any way, remove the tumors. It, consequently, does not prevent prolapsus and the discomfort arising from that condition, which generally causes more trouble to the patient than slight bleeding. It appears to me that all attempts to destroy vascular growths by causing coagulation of blood, or inflammation in them, while they are not shut off from the general circulation, must be fraught with danger. You can have no guarantee that the coagulum may not break down and minute particles of dead tissue find their way into the vascular or lymphatic system, and result in embolism or pyæmia, or both."

This statement in regard to this treatment, coming from a surgeon who is recognized as a leading authority upon rectal diseases, should be received by the profession with the greatest respect. At the time I wrote my article condemning this method I was in correspondence with many of the leading surgeons of this country and with several in Europe regarding its use.

The observations of learned authorities are to be regarded with more favor than evidence from other sources. I submitted the question to Allingham, Gowland, Goodsall, and Cooper, of England, to Erskine Mason, Van Buren, and Bodenhamer, of this country, and to a number of others whose names I can not now remember. Mason said to me that he had not used the acid, because he did not consider it the proper thing to do. Van Buren wrote me that he would not use the agent for the reason that he considered it *un-*

surgical, and likely to be attended with great danger. Gross said: "Of the various injections that have been used for the relief of these tumors, the principal are nitric acid, creasote, iodine, and perchloride of iron, introduced in small quantities, either pure or diluted, with a delicate syringe. These fluids are all more or less irritating, while several of them are capable of exciting high inflammation; hence it is hardly necessary to add that they should be employed with the greatest possible care and gentleness." The others discountenanced the plan.

The conclusions that I published in 1878 I have no reason to change to-day, but, on the contrary, I wish to reaffirm them. I have long since abandoned the method in my own practice, and it is a common observation with me to see patients who have been injured, and in some instances where life was endangered, by its use.

I know of several deaths that have resulted from this injecting plan; a number of instances where excessive and dangerous hæmorrhage resulted; a few where stricture of the rectum was caused by it; a considerable number where ulceration of the gut took place; two instances where an immense internal fistula was established, etc.

Case I.—Mr. B., aged about forty-five, a very healthy and robust man, was afflicted with an ordinary case of internal hæmorrhoids. He consulted an itinerant who used the injection of carbolic acid into the tumors. This man was confined to his bed for three months with a violent inflammation of the rectum, accompanied by abscesses, which resulted in a sloughing out not only of the tumor, but also of much of the tissue of the rectum. At this time I was called to see him. Upon introducing my finger into the rectum, I could easily push it into a large ragged opening that ran down into the tissues, beginning about one inch above the external sphincter muscle. A great amount of pus flowed out of the rectum with this slight dilatation of the muscle. I informed him that an operation would be necessary to effect a cure. I also told him that I feared the sphincter muscle was undermined

and perhaps involved in this trouble, and that he might have some incontinence of fæces following the operation. He was willing to submit to any operation which promised relief. After some preparatory treatment, I operated on him in a few days by making a clear incision into the cavity, laying open the sinuses, scraping the bottom of the cavity, and trimming off the edges. By careful treatment afterward, the parts healed nicely and I discharged him cured.

Case II.—Miss L., a young lady living in a Southern city, consulted an advertiser in regard to some rectal affection, and the carbolic-acid treatment was used in her case. As the result, violent inflammation ensued, an abscess formed inside of the rectum, which broke of its own accord, and was attended by a sloughing of tissues, very much like the first case. She came to me a few weeks afterward, and an examination revealed the condition that I have described. In this case I also recommended and did an operation something like that in Case I, but not so extensive. Before I operated on her, this girl suffered the most intense agony every time the bowels moved, but there was more or less distressing pain all the time. After I operated, all pain disappeared, the wounds healed nicely, and she was discharged cured.

Case III.—Mr. U., a worthy shoe merchant of this city, had been operated on for internal piles by an advertiser. He was assured that his cure was perfect and permanent. About two months after, in a slight straining at stool, he noticed the protrusion of a large mass, which was very like what he had before any operation was done. He consulted his family physician, and he, recognizing the condition of affairs, advised the patient to visit me. This he did, and I told him that these were hæmorrhoids, but not of recent date. He replied that he had been assured of his perfect cure, a good fee had been collected, and his name was carried on the circular of the advertising physician as one of his references. I operated upon this man, removing five large hæmorrhoidal tumors by the ligature.

Case IV.—A railroad conductor consulted an advertiser

and had his piles injected. He was told that it need not interfere with his business, and that he could run his train that evening. Not knowing of any danger, he took this advice, and when about fifty miles from this city a violent hæmorrhage from the rectum occurred. He was taken off the train, and for a time it was thought that he would die. A physician, however, succeeded in stopping the hæmorrhage, and advised him to rest for a considerable time, which he did ; and he eventually recovered.

I have cited these four cases simply as samples of what I have observed to result from the use of the carbolic-acid treatment of internal hæmorrhoids. I do not believe that it should be classed with the legitimate operations, and I would not now give it so much attention but for the fact that a number of good men in the profession have discussed the subject, but only a few remain to advocate its use. In the July number of the American Journal of the Medical Sciences, 1885, Kelsey reported about two hundred cases treated by this plan. At that time he was inclined to look upon it with much favor, but in a later article he does not speak of it in a very favorable way, and, indeed, said to me a short while ago that he had about abandoned its use. Agnew, of San Francisco, in his work on Diagnosis and Treatment of Hæmorrhoids, and other Rectal Diseases, freely advocates the carbolic-acid treatment. He says: "There are no tenable objections to the treatment of hæmorrhoids by carbolic-acid injection, rationally and scientifically applied, which can not be equally urged against the more heroic plans of treatment advocated and generally adopted. But there are many serious and unavoidable drawbacks inherent in the latter methods of cure which are wholly and incontrovertibly absent in the former method."

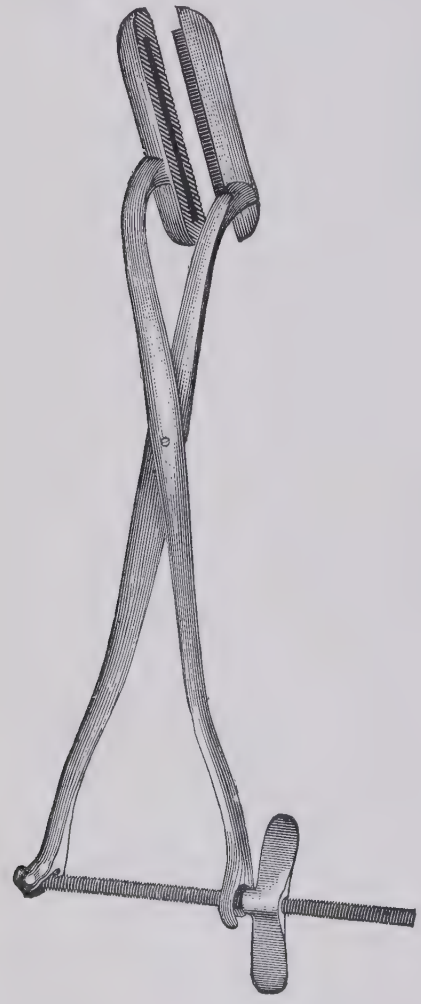
I think this is stating it too strongly. In the first place, it must be admitted that this method of treatment is nearly entirely confined to the itinerant, who is not able to apply it either "rationally or scientifically." I do not know either that the plans "usually practiced for the cure of hæmor-

rhoids" are "heroic," and as to the statement that "there are many serious and unavoidable drawbacks" in such plans that do not obtain in the acid treatment, it can not be borne out by facts. To inject an acid into a hæmorrhoidal tumor, coagulating the blood in the same, when a good-sized artery is supplying the tumor, is certainly not as safe as to cut off the hæmorrhoid from the general circulation by a silk ligature. Dr. W. T. Bull, the eminent surgeon, of New York, in speaking of this method in treating piles, says: "There have been reported instances of phlebitis, pyæmia, and death from its use; hence the method is to be employed with caution. A number of relapses have occurred, and I am disposed, therefore, to place the method among the *palliative* remedies."

Therefore, to conclude: so far as this treatment of internal hæmorrhoids is concerned, I would say that I quite agree with the learned surgeons who oppose its use as a radical method of curing the disease. It is attended with much danger, great pain, and certainly not with radical cures. There can be no special gauge as to the amount of the acid that should be thrown into a hæmorrhoid to effect its removal, and it is natural for the sloughing process to take place, and in doing so too much tissue may be destroyed; hence we may have internal fistulas originated in this way. In an effort at cicatrization, a stricture may result, and, as we have shown, violent hæmorrhage often takes place. That my views were not chimerical in regard to the following of this treatment by embolism, and to the occurrence of death in consequence, I cite the report made by Andrews and others, which verifies my predictions. In my opinion, it is the least surgical of all known plans for the cure of internal hæmorrhoids.

For those desiring to test the treatment, it would be best to use a solution of *one* part of pure carbolic acid, *three* of glycerin, and three of water. Kelsey says that he prefers the the carbolic acid reduced one half in the solution. In my experiments it occurred to me that those patients did best where the percentage of the acid was greatest, but, as I discounte-

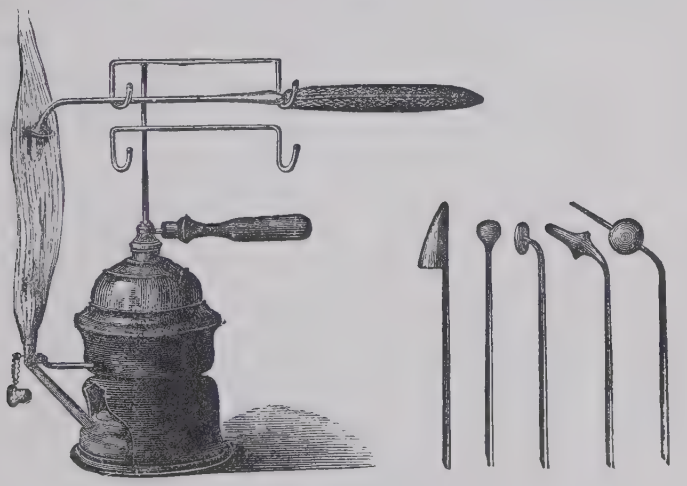
nanced the treatment as a radical operation, I agree with Bull that it should be regarded only as palliative, and the less the amount of acid used, the less is the danger to be apprehended, so far as a *deep slough* is concerned. I believe the amount injected of the solution that I have named should be *ten* or *twelve* drops, but Kelsey suggests *five* drops into each tumor of a stronger solution. Hæmorrhoids can best be injected when they are protruded. The speculum is used by some, but, in my opinion, it does not compare with the other plan. The patient, by his own effort at straining, can usually force the tumors out. If not, they can be drawn down with forceps. The injection should be thrown into the center of the tumor, or at least as near it as it is possible to do. After the hæmorrhoids are injected, they should be pushed back into into the rectum, and the patient should be commanded to remain in bed. It is suggested by Kelsey and others that only one tumor be injected at a time, and not to repeat the injection for one week. When I began experimenting with this plan I thought as they do; but later on I became convinced that it was just as well to inject at least *two* tumors at the same time. Kelsey, in



Rectilinear écrasseur. (Nott's.)

speaking of the subject, says: "But no such use of the acid is necessary to effect a cure, and sloughing is a result which I try very carefully to avoid." Of one thing I am positively certain: that, unless sloughing of the tumor occurs, there is no radical cure, and if sloughing does *not* occur, the remedy must be regarded as *palliative* and not curative.

Crushing.—After Mr. Pollock wrote his paper, which appeared in the Lancet in 1888, I was rather impressed with the idea of crushing as a means of curing internal hæmorrhoids, and the results that I obtained were very good; but after *antiseptic* surgery came into use I was persuaded that there was more danger in leaving the crushed stump of a pile in the bowel than I had anticipated, and therefore, for theoretical reasons, more than from any result that I had, I abandoned the treatment. It is certain that we would run a risk

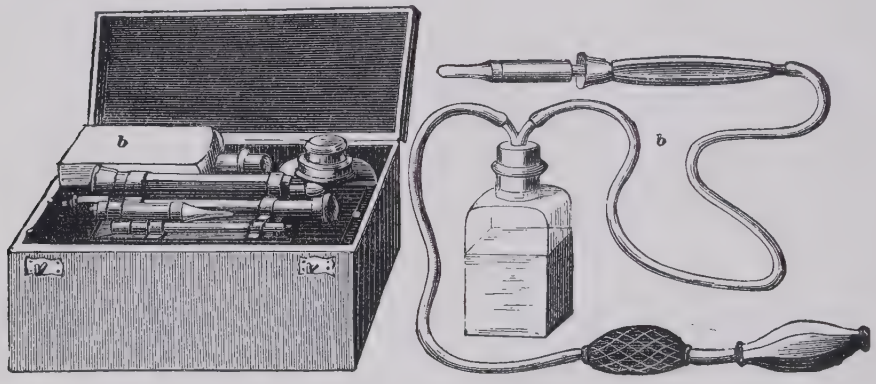


Self-blowing alcohol lamp for heating cautery irons.

of sepsis if we left the bowel as it would be left after the crushing method. Herbert Allingham has improved upon the method of Pollock, and approves crushing as a means of treating internal piles.

Clamp and Cautery.—Whatever advantage the clamp and cautery can have as a method in treating internal hæmorrhoids, we are indebted to Mr. Henry Smith for it. As near as

an operation can be closely associated with one's name, this operation is allied to Mr. Smith's. Not that he devised it, for that credit must be given to Mr. Cusack, of Dublin. Nor did he first introduce it into London; that was done by Mr. Henry Lee; but Mr. Smith has been an ardent advocate of it, and has used it, perhaps more than any one living, in doing the operation for internal hæmorrhoids. In this country it has been received with but little favor. Kelsey, however, is



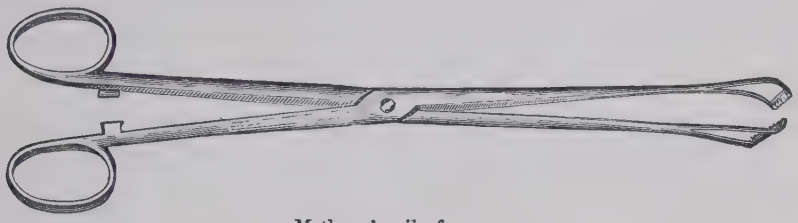
Paquelin's thermo-cautery.

a firm believer in the clamp and cautery. The plan is this: Each tumor is seized by a pair of forceps and drawn well down. The clamp is then applied so as to embrace its base, the portion above the clamp is cut off with a pair of scissors curved on the flat, and a thermo-cautery iron, heated to a dull-red heat, is freely applied to the stump until all the vessels stop bleeding.

In regard to this operation Allingham says: "In my opinion, this operation has little to recommend it. As regards danger to life, after all the issue of greatest moment, as far as my most careful researches have led me to a conclusion, it is quite six times as fatal as the ligature, properly and dexterously applied."

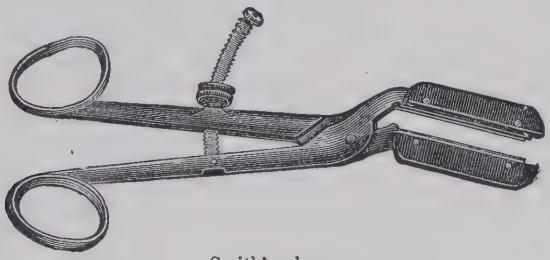
I use this plan in some selected cases—viz., where there is a large amount of superfluous skin around the anus, which is embraced in, or goes to make up, a part of the internal hæmorrhoid, which falls under the variety of the mixed class.

If this amount of skin is cut off, excessive bleeding may occur. If an incision is made around it and it is ligated, we are chary about cutting too close to the ligature, and therefore we have much skin left and many ligatures to deal with.



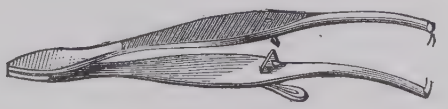
Mathews's pile forceps.

By using the clamp, we can embrace all of this skin in a few sections, and, cutting close to the clamp, we can sear all the vessels. These are exceptional cases, however, and therefore I do not use the clamp and cautery often in my practice.



Smith's clamp.

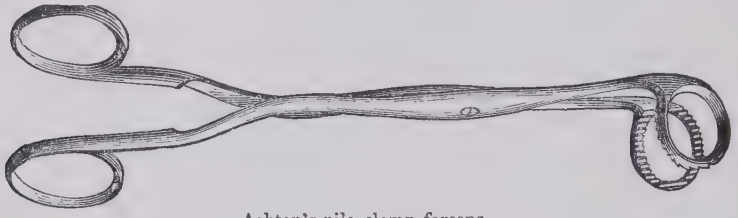
The disadvantages of the method must be apparent. In the first place, the patient, coming into the operating-room, sees at a glance instruments which look like those of torture, or, if he does not see them, but has an inkling of their nature, he



Bush's pile forceps.

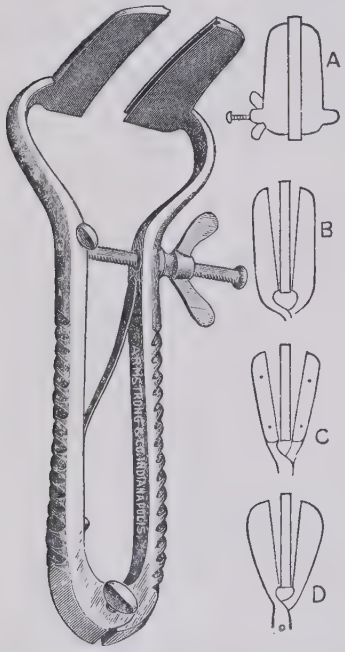
must regard a hot iron to be applied in the manner that it is during the operation as a very horrible thing. Even to a bystander the operation looks uncalled for. It can not be denied that the burning of this amount of tissue causes a very great deal of pain after the operation. No one can say

that the iron has had full cautery effect upon every vessel, and therefore hæmorrhage is more likely to occur than after the ligature. The period of convalescence is very long; frequently more sloughing of the tissues than was intended takes place; and we all know how natural it is for extensive scar tissue to follow burns; therefore contraction of the



Ashton's pile clamp-forceps.

anus and rectum is to be feared. Having other operations at our command, which are more simple of execution and not fraught with so much danger, I can not see the advisability of using the clamp and cautery for the removal of hæmorrhoids except in a few selected cases.



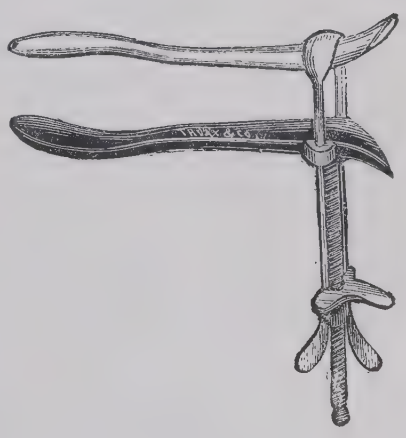
Gant's clamp.—Diagrams showing the clamping power of different clamps. A, Gant's; B, Kelley's; C, Smith's; D, Langenbeck's.

Excision.—In speaking of excision of internal hæmorrhoids by the knife or scissors, Allingham says: "For my own part, I think it is one of our best operations, and I have now records of numerous cases in which I excised internal piles with remarkably good results."

I think an author should consider the audience that he is addressing, especially in referring to dangerous surgical operations. In the hands of an expert operator like Allingham I can understand how an internal hæmorrhoid could be excised without great danger, but in the hands of

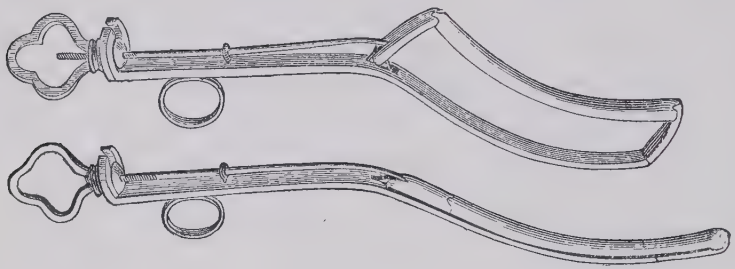
a man that was not *au fait* it must be acknowledged that it would be a very dangerous operation. The following is the method that Allingham employs: "In performing excision I first gently, but fully, dilate the sphincter muscles, and employ a retractor to keep the anus well open. I then seize the pile deeply by its base, cut it off below the level of the volsella, and do not let it go until all bleeding is arrested by torsion of the arteries. Rarely more than two vessels spout and require twisting. I wait for a little while to see that all bleeding has ceased, and then I treat the other piles in a similar manner." I think that those that have done much operating around the rectum will bear me out in saying that in but few hands could this operation be regarded as a safe one, and therefore can never become popular.

Dilatation of the Sphincter Muscles.—This treatment of internal hæmorrhoids is confined almost exclusively to France. I believe that Verneuil was the first to suggest it. In the first place, I must agree with Allingham that the rectal physiology of Verneuil gives no clew to the treatment, and I am satisfied that in no single instance where a full, well-formed internal hæmorrhoid exists can dilatation of the sphincter muscle cure it. The relief that is obtained in hæmorrhoids by this dilating process is not that it cures the hæmorrhoids, but that it puts at rest an irritable sphincter muscle; for generally in this condition there is some abrasion around this muscle, and a most wonderful relief is afforded by dilating it. I can not subscribe to the belief that through the dissections made by Verneuil we find sufficient evidence in the peculiar distribution of the veins, and the course they take in the coats of the rectum, to disprove the theory that



Thebaud's sphincter dilator.

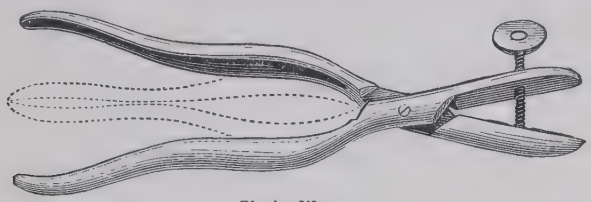
constipation, sedentary occupation, drastic purgatives, prolonged use of enemata, etc., can institute true hæmorrhoids. His idea that the superior hæmorrhoidal veins pass through "*véritables boutonnières musculaires*," and that the muscular button-holes have the power of contracting and causing such stasis and congestion in the superior hæmorrhoidal veins as to cause the "*primum mobile*" in the formation of internal piles, I do not believe. Upon this theory was dilatation of the two sphincter muscles suggested as a cure for internal hæmorrhoids. Whatever might have been its success in France, I am sure it has failed of its object in America. This failure I attribute to the mistaken premise upon which



Collins's dilator.

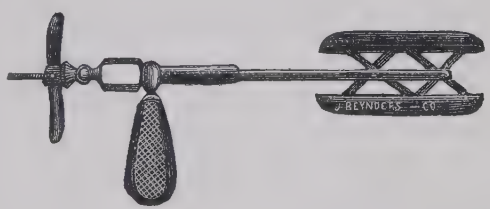
it was based. In a word, then, I believe hæmorrhoids to be tumors in the formation of which the arteries as well as the veins play a part. I quite agree with Verneuil that the superior hæmorrhoidal veins are connected with the portal system, and, in the main, form internal hæmorrhoids, and that external piles are formed from the external and middle hæmorrhoidal, which are not connected with the portal venous system, and hence the two venous systems—*portal* and *general*—are practically distinct at this point. This proposition is admitted, and yet we can not admit the absolute separation of the portal and general venous systems. I have been thus explicit on this point from the fact that confusion has often arisen over it, especially with students. Then, again, we must consider, even if we admitted the point that dilatation of the sphincter muscles would sometimes cure internal hæmorrhoids, that, if it was adopted as a plan of treat-

ment, and indiscriminately used, very much damage would be done by it. There are three classes of patients upon whom we should be very chary about doing a forcible dilatation of these muscles: women, debilitated people, and the aged; and yet these are the very people commonly affected

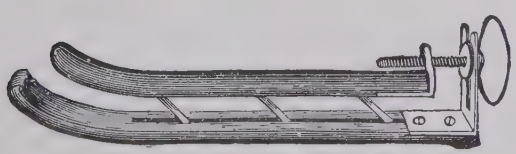


Sim's dilator.

with hæmorrhoidal trouble. In cases of fissure of the anus, or an irritable ulceration of the rectum, this is the ideal operation; and the reason for its being so is easily understood. But to dilate a sphincter and break the fibers which keep up the irritation in the ulcer, to give the sphincter rest, and to cause the ulcer to heal, is a very different thing from dilating a sphincter where well-formed tumors exist, with the expectation of dissipating them. There could be but one way in which they would disappear, and that would be by reabsorption. Dr. H. O. Walker, an eminent surgeon of Detroit, in a reprint published in 1887 on the treatment of anal fissures and hæmorrhoids by gradual dilatation, reports some very beautiful cases that resulted favorably; but in these, as in the other cases by different men who have written on the subject, I hold that there is no permanent cure where hæmorrhoids exist, consequently the relief is but temporary.



Durham's dilator.

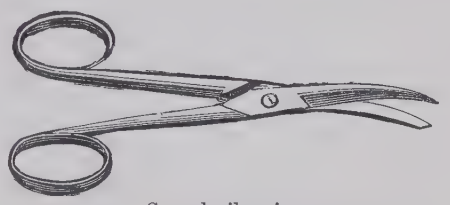


Rigand's dilator.

Whitehead's Operation.—Every few years the medical profession is treated to some new operation in surgery, the presentation of some much-wanted instrument, or the modification of some operation or instrument. The custom has become so prevalent of late that the profession looks with suspicion on all such, until an honest demonstration is had. I do not wish to appear in the rôle of discouraging any honest attempt to improve upon old methods, yet I have seen so many instances when such an endeavor amounted to almost a burlesque, that I must be excused for doubting until I am convinced. Scarcely has there ever been such a *consensus* of opinion among noted surgeons in regard to the surgical treatment of any disease as internal hæmorrhoids, Gross, Erichsen, Van Buren, Allingham, Sr. and Jr., Ball, Wyeth, Straus, Bull, Copeland, Bush, Cook, Sir Benjamin Brodie, Syme, Curling, Quain, Ashton, Gowlland, Cooper, Goodsall, Gerster, Bodenhamer, and a host of other authorities agreeing *that the ligature is the simplest and most radical cure for internal hæmorrhoids.* Their statements are proved true by comparison with other methods, by its simplicity, by its freedom from danger, and by its radical cures. Latterly there have been many methods proposed for the treatment of piles, and they have generally met with the same fate—namely, abandonment by the profession after a fair trial. Among these may be mentioned the injection plan, crushing, divulsing the sphincter muscles, etc. Mr. Whitehead, of Manchester (England), has lately proposed a new operation for the cure of hæmorrhoids which consists in the radical *excision* not only of the pile tumors, but also of the entire *hæmorrhoidal plexus.* It would require more time than I would have in this chapter to enter into a discussion of the many things that have been said *pro* and *con* about this operation ; therefore I shall content myself with a review of the operation itself as coming from the lips of the author, and which is now known as Whitehead's operation.

He thus describes it: "The anæsthetized patient, having been placed in the lithotomy position, and the sphincters

paralyzed by stretching with the fingers, by the use of scissors and dissection-forceps, the mucous membrane is divided at its juncture with the skin around the entire circumference of the bowel, every irregularity of the skin being carefully followed. The external sphincters and the commencement of the internal sphincters are then exposed by a rapid dissection, and the mucous membrane and attached hæmorrhoids, thus separated from the submucous bed on which they rested, are pulled bodily down, any individual points of resistance being snipped across, and the hæmorrhoids brought below the skin. The mucous membrane above the hæmorrhoids is now divided transversely in successive stages, and the free margin of the severed membrane above is attached as soon as divided to the free margin of the skin below by a suitable number of sutures. The complete ring of pile-bearing mucous membrane is thus removed."



Curved pile scissors.

To this operation I shall prefer seven objections:

1. *The operation can not be advised except in selected cases.* No distinction is made between the character of piles. It is a notable fact that the most dangerous of all internal hæmorrhoids is the small capillary bleeding variety. Hæmorrhage may be so great as to endanger the life of the patient. Upon examination, the tumor is found to be located much higher up the gut than the ordinary venous tumor, and not larger than a raspberry. Would any one recommend Whitehead's operation for a condition involving so little pathological change either in the vessels or tissues? And yet this is an internal pile, with dangerous symptoms. A touch of nitric acid to the spot, or a silk thread thrown around the base of a small tumor, stops all bleeding and cures the pile. Again, the patient who has *phthisis* complains of a tumor protruding from the anus at each stool. The vitality of this person is much below par; nutrition is very bad; confinement to

bed would be dangerous to his life. It would be folly to do the operation of excision in his case, which would mean non-union of cut surfaces, a flow of pus, weeks in bed, and a rapid advance of *phthisis*. By the use of the silk ligature the patient would not be confined to bed, and yet a radical cure of the pile would take place.

2. *An anæsthetic is necessary in every case.* Of course no one would attempt to do the operation without an anæsthetic. It would be impossible to do it. There are many persons to whom, from physical causes, it would not be safe to administer an anæsthetic. If it be said in reply that on such you could do no one of the other operations, this alone admits the argument. For the other methods it can be said that they can be practiced without an anæsthetic, and it is admitted that the cure would be radical—as, for instance, by the ligature.

3. *Full and complete paralysis of the sphincter muscles is necessary to do the operation.* This is urgently advised by the author; indeed, it would be impossible to accomplish the operation without this step. Those who have done much of this work recognize that it is a dangerous thing to practice the divulsion of these muscles in all cases. Incontinence of fæces would often be witnessed if his advice was followed. The sphincter muscles in the female, as we have stated before, yield much more readily than do those in the male, and are much longer in regaining their lost power. If incontinence of fæces resulted in consequence, as would often happen, the result would be much more serious than the disease. Again, we witness in many patients who are enfeebled in health a lax condition of the sphincter muscles. This is especially the case in tuberculosis. The operation would not be warranted in such cases. It can be said in favor of other methods that they can be practiced without divulsing the sphincter muscles; hence in the cases cited they would take the place of Whitehead's operation.

4. *The operation is "difficult, tedious, and bloody."* I know that the author has replied to this charge that he is

satisfied that it is an operation which can be easily performed by any surgeon possessing the average skill and intelligence, and to the charge that it is a bloody one he says that "it is never excessive hæmorrhage; such as I meet may very well take a subordinate position to other and more important considerations in the operation."

To these two statements I wish to reply: (*a*) I am satisfied that all who attempt it will say that it is the most difficult of all the operations proposed for hæmorrhoids; (*b*) from the anatomical nature of the case, it is bound to be a bloody operation; large vessels are necessarily divided and have to be secured; (*c*) I quite agree with the author that hæmorrhage is a subordinate consideration to others in the operation, for it is very difficult of execution and dangerous in many ways.

5. *If union does not take place by first intention, pus accumulates, and the result must be an ugly one if not dangerous.* If the parts are not freely reopened, pus is confined, pent up in a recent wound, and the danger of *sepsis* enhanced. If they are opened, healing must be by granulation, over an extensive surface, together with the fact that flaps exist that must be cut away, or they will hinder a good result. By the use of other methods no such condition of affairs could exist.

6. *The author recommends in doing the operation that the whole of the hæmorrhoidal plexus be excised.* This he makes absolute. To this I dissent. Just as well say that for a varicose condition of the veins of the leg the whole venous distribution of the limb should be excised. I can not agree that every dilatation here is a varicosity. No pathological change is evidenced in much of the plexus, and to remove these vessels that are simply distended with blood is bad surgery. It is a fact that they will return to their normal size and functions after the operation. This is witnessed after removing hæmorrhoids by the ligature. Vessels that were engorged with blood resume their natural condition and appearance. I once heard the elder Allingham say that after a satisfactory operation for internal hæmorrhoids by the liga-

ture he had never operated a second time upon the same patient. This has been my experience. If the dilated veins that were left continued in a state of varices, the hæmorrhoidal tumor would have quickly reformed.

7. *It can be maintained that secondary hæmorrhage is likely to occur after this operation, and that the results given by the author do not justify his claim.* Recognizing that secondary hæmorrhage might result in these cases, and that it is a bloody operation, Dr. Henry O. Marcy has devised a plan of securing all the important vessels involved in the operation by continuous encircling animal sutures *before* division. This, in my opinion, is an admirable suggestion, and should be followed by any one doing the operation. Dr. Marcy wisely says: "This plan certainly diminishes the loss of blood and insures against secondary hæmorrhages." The two things most dreaded in this operation.

To the statement that the results do not prove the claims of the author, I would say that if the statements of many of the leading authorities of the world are to be believed, the ligature has proved to be the simplest, most effectual, and the freest from danger of all methods of operating for internal hæmorrhoids. The results as obtained by Whitehead could not be better than have been obtained with the ligature. The idea advanced that the danger in the use of the ligature lies in the fact that septic infection is likely to follow is chimerical. As the tissue of this well-formed tumor is passed through by the ligature, a healthy granulating surface is left, which resists all septic invasions. If this were not so, why is it that authors are able to report thousands of operations for hæmorrhoids by the ligature without the least semblance of sepsis? I had the honor to report to the surgical section of the American Medical Association a short time ago *one thousand* operations for hemorrhoids by the ligature without a single death or a case of septic infection. After an experience of fifteen years in operating for this trouble, I have never operated upon the same patient the second time; have never tied a vessel during the operation. That it is a simpler operation

than Whitehead's can not be denied. That it is as free from danger is borne out by facts. After a fair trial of his operation I am forced to conclude: 1. That the operation meets the demand in but few cases. 2. When it is considered that a large proportion of subjects are unable to take an anæsthetic, that some danger is always risked in giving an anæsthetic, other methods, simpler in execution and freer from danger, can be practiced without the use of an anæsthetic and should be preferred. 3. As a full and complete paralysis of the sphincter muscles is necessary to the operation, great risk would be assumed in many cases. Other methods of cure would not necessitate this procedure. 4. From the fact that large blood-vessels have to be divided and that the rectum is a difficult place in which to secure arteries, the operation is in consequence "a bloody, difficult, and tedious one." 5. If union by first intention does not take place, as would likely be the case in strumous and other diatheses, the wound would be a large suppurating one, and sepsis would be invited. 6. The operation is not considered complete unless the whole of the hæmorrhoidal plexus is removed. I submit that this involves an unnecessary amount of surgery and that the author's conclusions are based upon a wrong premise. 7. In view of the fact that the vessels are tied or twisted during the operation, and that the parts are in a diseased state, secondary hæmorrhage could be easily induced, and is a dangerous condition, especially so in the rectum.

Outerbridge (Mathews's Medical Quarterly) proposes the thorough excision of external piles, and the suturing of the cut edges. Where the "hæmorrhoidal" inch is to be removed, he advises that a dissection of a strip of mucous membrane and hæmorrhoidal tissue be made down to the muscle. The free edges of skin and mucous membrane are brought together with a continuous catgut suture. Manly suggests a treatment of internal piles by a forcible pressure massage with the fingers. Thorough cocainization and dilatation are necessary.

CHAPTER VII.

THE LIGATURE IN THE TREATMENT OF INTERNAL HÆMORRHOIDS.

I DO not think it can be gainsaid but that the ligature is the easiest of execution, safest in its results, accompanied with less pain, and the convalescence quicker than any other method of treating internal hæmorrhoids. Again, it can be asserted that most of the leading specialists and distinguished surgeons of both this country and Europe prefer it to all other plans. It can be done under strict antiseptic precautions, and statistics will show that fewer deaths have followed its use than any one of the other methods. Erichsen said that "all external piles should be cut off and all internal piles tied." I do not think to this day we can improve upon that injunction. The method has stood the test of time in the hands of the best surgeons, and the verdict to-day is as I have stated it. Allingham voices the sentiment of the profession when he says: "I do not think in the whole range of surgery there is any procedure worthy of the name of operation which can show a greater amount of success or smaller death-rate than the ligature of internal hæmorrhoids."

In this chapter I have given the names of some of the most eminent surgeons, both here and abroad, whose word must be taken with the greatest respect. Bushe never had a fatal case with the ligature. Sir Benjamin Brodie, who had a large experience, never lost a case. Mr. Syme never met with a fatal case. Ashton, Cooper, Van Buren, Bodenhamer, neither of whom ever met with a fatal accident. What language could be more to the point than that of Gross, our great surgeon, who said: "The operation by ligature is as

simple of execution as it is free from danger and certain in its results." We must judge of a tree by the fruit thereof. And these results, gathered from such eminent authorities, speak for themselves.

The operation by ligature being the favorite one in my practice, I shall take the liberty of repeating here some of the precautions and rules that I observe in the operation. I shall also differ from some noted authorities upon the manner in which the ligature should be used. The report that I made to the American Medical Association, and to which I have referred in this chapter, of Some Observations after One Thousand Operations for Hæmorrhoids, included both external and internal piles; patients taken indiscriminately from hospital, dispensary, and private practice; those done in cabins, as well as those in well-regulated infirmaries. Up to that time I had never met with a fatal accident. A short time after making that report I lost a patient from tetanus after ligating internal hæmorrhoids. To the principle involved in the use of the ligature all surgeons are agreed, but the method of application is, to a certain degree, disputed. The method of operating at St. Mark's Hospital, and practiced at that institution for more than fifty years, is described by Allingham as follows: "The patient, having been previously prepared by purgatives, is placed on the right side on a hard couch in a good light, and is completely anæsthetized. Then I always gently but completely dilate the sphincter muscles. This completed, the rectum for three inches is within easy reach, and no contraction of the sphincter takes place, so that all is clear like a map before you. The hæmorrhoids, one by one, are to be taken by the surgeon with a volsella, or pronged hooked fork, and drawn down; then with a pair of sharp scissors separate the pile from its connection with the muscular and submucous tissues, upon which it rests. The cut is to be made in the sulcus, or white mark, which is seen where the skin meets the mucous membrane, and this incision is to be carried up the bowel and parallel to it to such a distance that the pile is left connected by an isthmus of vessels and

mucous membrane only. There is no danger in making this incision, because all the larger vessels come from above, running parallel with the bowel, just beneath the mucous membrane, and thus enter the upper part of the pile. A well-waxed, strong, thin-plaited ligature is now to be placed at the bottom of the deep groove you have made, and the assistant then drawing the pile well out, the ligature is tied high up at the neck of the tumor as tightly as possible. Be very careful to tie the ligature, and equally careful to tie the second knot, so that no slipping or giving way can take place. I myself always tie a third knot. The secret of the well-being of your patient depends greatly on this tying—a part of the operation by no means easy, as all practical men know, to effect. If this be done, all the large vessels in the pile must be included. The arteries in the cellular tissues around and outside the bowel are few and small, as they do not assist in the formation of the pile, being outside it. These vessels rarely require ligaturing. The silk should be so strong that you can not break it by fair pulling. If the pile be very large, a small portion may now be cut off, taking care to leave sufficient stump beyond the ligature to guard against its slipping. When all the hæmorrhoids are thus tied, they should be returned within the sphincter. After this is done any superabundant skin which remains apparent may be cut off. But this should not be too freely excised for fear of contraction when the wounds heal. I always place a pad of wool over the anus with a tight T-bandage, as it relieves pain most materially and prevents any tendency to straining."

I have quoted this plan as detailed by Allingham, in his most excellent book on Diseases of the Rectum and Anus, because it is the most popular with all surgeons who use the ligature in operations upon internal piles, and that I expect to differ with the learned author on several important points in regard to the *technique* of the operation.

Preparation of the Patient.—In these days, when modern surgery must obtain in all surgical operations, the rectal surgeon must give a very great deal of care to the preparation of his

patient before operating. I shall therefore be excused for the reiteration of my suggestions on some points in antiseptics which will refer especially to this operation. Cripps advises that the patient should have a dose of castor oil the last thing in the evening two days preceding that fixed for the operation, and regards it as an unfortunate oversight in the previous edition of his work that he recommended the medicine to be given the evening *before* the operation. He says it is a mistake to do so, because the patient is often much disturbed at night in consequence, and is therefore in a very unfit condition for any operation in the morning. But I should reverse the thing as he has it now definitely settled. If a purgative is given two days preceding that fixed for the operation, the purgative, in my opinion, will accomplish very little if any good looking to the operation. Twenty-four hours is quite sufficient for the rectum, if not the sigmoid flexure, to become loaded with fæces again. Cripps evidently expects the injection of a pint and a half of warm water that he has administered the morning of the operation to clear out the rectum. This it will likely do, but it will not clear out the alimentary canal. Therefore a better plan, I think, if you have your patient under observation for two days, is to give him a brisk saline purge on the second day prior to the operation, and on the evening before the operation, to prevent a reaccumulation in the small or large intestine, give him a gentle purgative pill at bedtime, which will not disturb him through the night, as castor oil would do, and his bowels will be moved in quite sufficient time for the operation next day. Just before going to the operating room it is best to have the patient take a hot bath, and *not* the evening before, as suggested by Cripps. One night is quite sufficient to undo all that has been accomplished by the bath, looking from a surgical standpoint. Presuming, then, that the patient is in clean linen after his bath, he is put on the table, and the parts to be involved in the operation are then thoroughly washed with a bichloride-of-mercury solution (1 to 3,000 or 1 to 5,000). The parts are shaved if necessary. I prefer the washing here with the mer-

curic solution to ether, because the latter is accompanied with a burning sensation. Presuming that all the surroundings are aseptic, the patient is put under the influence of the anæsthetic, after which he is placed in Sims's position, with the legs drawn up toward the abdomen. I prefer this to the lithotomy position. In the latter it is necessary to secure the legs by Clover's or some other crutch, and those in the habit of operating with the patient in this position recognize the fact that the stoutest crutch sometimes gives way under the efforts of the patient while under the effect of an anæsthetic. An assistant, standing in front of the patient's knees, can easily hold them down. With a good light there is no difficulty in obtaining a perfect view of the rectum. I then introduce either a Cook or Mathews speculum and divulse the sphincter as widely as the instrument will distend it. This will be found to be an admirable help to the fingers, which are introduced after the speculum is withdrawn. Not much force is now required to distend the muscles; but here I wish to emphasize that it is not my practice to *break* the muscles, and unless some such caution is given by the authors, the inexperienced might think it necessary to do so. I distend until I feel a gentle relaxation. It will now be seen that the piles will present themselves, but not in their entirety. A mistake might be made here of ligating just what was in sight, thinking this would complete the operation and effect a cure, but it is not so. It is best now to take hold of one of the large tumors with a four-pronged forceps, or clamp, and pull it forcibly down. It will then be seen that as much again as protruded is brought down. If this be repeated on the other side, granting that a hæmorrhoid is found there, it will now be seen that the parts are everted and the other smaller tumors are brought into view. A pair of small retractors can be used in lieu of the forceps or clamps. These are given the assistant to hold while the operator secures the smaller piles, if any, and ligates them. It is important here to use two sizes of thread—a smaller size for the smaller tumors, and a larger size for the large tumors. It has been my observation,

in tying small internal piles with a large ligature, that it slips off more easily than if a smaller ligature is used. The character of thread is a consideration. I think a stout linen thread quite as good as silk, but it must be understood that it must be so stout that it will not break with the hardest pulling. Much confusion arises, especially after transfixing tumors, from having the thread break. It is best also to have it well waxed, for the reason that it adds somewhat to its strength, but mainly that it makes the knot more secure. The smaller tumors then are tightly tied without transfixing. As to the large tumors, my method is this: Before putting the patient on the table, I carefully examine the parts to see whether there is any superabundant skin around the anus. To my mind this is of great importance. If it is a smooth anus, with no disposition to folds or superfluity of true skin, then I consider any cutting whatever unnecessary. However the parts may look after the mass is protruded, because great bulging takes place, not only of the tumors themselves but also the general anatomy of the parts, I refrain from the use of the knife, but proceed as follows: While the anus is being held open by the assistant with the aid of the retractors, I have the nurse flush the rectum, as far as exposed, with the bichloride solution, with an irrigator (1 to 5,000). The small tumors are picked up and ligated in the manner just mentioned. The large tumors are caught well at their base, drawn stoutly down by the forceps, held there by the assistant, and a curved needle, threaded with stout silk, is passed immediately through the base. The needle is now cut away and the ligatures tied stoutly, first on one side of the tumor and then on the other. The operator should be very careful to draw the thread each time to see that the corresponding half is pulled before tying, else he may tie the wrong thread, and if he does, no strangulation of the pile takes place. Having the tumor tightly tied on each side, the pile is now cut off with a pair of straight, not curved, scissors. By so doing, you have an even surface, whereas if you used curved scissors the cut dips more in the center than at the sides, and might embrace

more of the tumor than you proposed. It is a question how much of the pile should be cut away above the ligature. I think the advice usually given by authors is a little *too* careful—for this reason: If we only clip off a little portion of the tumor we leave the major portion or portions to be pushed back into the bowel; consequently, that much more tissue is left to slough. If the tumors have been properly tied, I do not think the ligature is apt to slip, even if we cut tolerably close to it. The stump spreads out after the cut is made, and it is the rarest thing that it will slip off. Instead of cutting off *one* third of the tumor above the ligature, I am in the habit of cutting off *two* thirds, and I have never had hæmorrhage result in consequence of this. The stumps, after being dusted with iodoform, are now reduced, the irrigation of the mercuric solution having been kept up more or less during the operation. A piece of iodoform or bichloride gauze is now placed over the parts, one end of it being gently pushed into the anus and against the stumps. I am satisfied that by this manœuvre the parts are kept from prolapsing. A large piece of absorbent cotton is now placed over the gauze and a T-bandage applied. The patient is then given a hypodermic injection of one fourth of a grain of morphine and one one-hundredth of a grain of sulphate of atropine before he is taken to his room. This is repeated in one or two hours if necessary. If there has been no cutting done in this operation, the pain is very little, and frequently it is not necessary to give an opiate at all. I have found, after these operations, that sulphonal is a most excellent remedy to control the muscular spasm of the sphincter muscles, given in fifteen- or twenty-grain doses. If we have found that the patient has a superabundance of skin in the way of tags or folds, it will be necessary to do another operation. My plan is namely: The small piles are ligated in the usual way, and, presuming that they are everted or turned out, a four-pronged forceps, or a clamp, is made to catch them firmly at the base, encroaching more or less on the true skin, which is found coexistent with the parts. While the assistant holds it firmly out, a delicate knife is inserted on

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one side of the tumor at the junction of the true skin and mucous membrane and carried outward around the pile, including all the superfluous skin of that tumor, to the corresponding point at the other side. The hæmorrhoid is then transfixed as in the manner suggested above, one thread being tied on the mucous side, tightly at the base of the pile, and the other thread is made to fall in the cut and is equally secured. The tumor is then cut off above the ligatures, leaving only enough to make the stump. Each large pile, which includes or is opposite any superfluous skin, must be treated in like manner. It will be seen that this operation differs materially from the one detailed by Allingham. In the first place, no cut is made in the so-called sulcus or white mark. My objection to this advice is simply that it is nearly an impossibility, at least in the great majority of cases, to ever find the white mark, or to define exactly the sulcus. And as the superabundant skin is to be taken away in any event and by some manner, I think this is preferable to that suggested by Allingham. I think, too, that this manner of dealing with the superfluity of skin has its advantages over the other. It is easier for the student to comprehend what you mean, and you accomplish by one sweep of the knife what it takes two acts to do by the other. Then, too, you have a smoother surface left after the operation.

According to Allingham's plan in cutting into the supposed sulcus, then ligating, the superabundant skin is afterward cut off. In doing this it will be observed that often an irregular cut is made, and you have left a portion of skin or tissue next to the point of ligature, which, after cicatrization, leaves a ridge of scar tissue ; or if it be said that a clean cut is made, then you have done no more than has been suggested in the plan I mention. Another objection that I would prefer is the advice given that "this skin should not be too freely excised for fear of contraction when the wound heals." Now, I think this a very important point, but I beg to be on the other side of the question. One of the greatest annoyances after doing this operation is the swollen and ragged appear-

ance of this skin that was left. If I had any one suggestion above another to give the operator, it would be to make a *sweeping* cut of these tags. So apropos to this subject is a case that I have now under treatment, and which is but a sample of many, that I beg to detail it here.

Case.—Mr. V., a countryman, came to me ten days ago to operate on him for large protruding piles. I did the operation after the manner suggested, at the time removing two large superfluous folds of skin, together with two hæmorrhoids, and noticed at the time that there were two other tags of uninflamed skin around the anus. Although it is my custom to remove all such, in this case, for some reason, I left these two. The case progressed nicely until to-day, when I was summoned to the infirmary by my assistant, who said that the gentleman was in great distress from having two inflamed piles protrude from the rectum. I went to see him, and found that during the night he had had an action, when the hæmorrhoids that I had tied had sloughed off, and the two tags of skin that I had refused to remove during the operation had taken on an active inflammation and were very much swollen and œdematous. I gave him some palliative treatment, and expect to cut them off to-morrow, which will necessitate the administration of an anæsthetic.

This has occurred to me a number of times in my practice, and will invariably occur if all superfluous skin around the anus is not removed during the operation. It will also occur if but a small portion of the tag is cut off, in that the stump will take on inflammatory action. I know it is said that if we remove too much skin around the anus in this operation contraction will result. I believe that this is chimerical. I have practiced this manner of operating for many years, and I have never yet had contraction result which was sufficient to call for any dilatation whatever.

The patient should be put to bed, and a light diet, consisting mostly of fluids, should be given for several days. At noon of the third day I usually order that the bowels be opened, and I believe that an aperient will do this best. A

Seidlitz powder, given on an empty stomach, will usually accomplish the desired result. If it does not in a few hours it should be repeated. At the time that the patient feels that the bowels will move, all dressings should be removed, and an injection given of a pint or more of hot water. This insures a comparatively easy action. If they are disposed to act more than is thought necessary, they can easily be controled with a dose of paregoric, two to four drachms. If any pain should occur afterward in the abdomen indicative of an action, even up to the time that it is necessary to move the bowels again, paregoric should be administered. When the bandage is removed, and it is found that the cotton is sticking to the wound, it can be easily made to drop off by irrigating it with hot water. If some inflammatory action exists around the anus, the application of boiling hot water should be the method used to quiet it. Allingham says that if he finds any wool in the anus or sticking to the wound, a poultice is applied to soften the dry blood and assist in loosening the wool. I must take exception to applying a poultice to fresh-made wounds. They are considered, and I think properly so, as a bed for germs, and I would not risk their application. Much more good can be accomplished by the use of the hot mercuric solution through an irrigator, often repeated. After the bowels have been moved on the second or third day, I have the parts irrigated one day with the mercuric solution, and the next day with the hot water carbolized, alternating with the two agents. After this irrigation I apply the iodoform gauze, without pushing it into the anus, over the gauze the surgeon's cotton, and then a T-bandage is applied. The parts should be dressed in this manner every day until the wound is healed. The ligatures are apt to drop off from the sixth to the ninth day. A careful inspection of the parts should be made about this time if any ligature is left, for the reason that it is only held around a little piece of tissue. If this is so, a tenaculum should be slipped in the loop; then, by pulling gently down, it can be clipped with a pair of scissors or with a sharp-pointed knife. After all the tumors have sloughed off some sore-

ness will be felt, but I do not believe in the advice that an ointment should be applied. Grease is calculated to do a wound harm, certainly no good. Tell the patient to sponge the parts often with very hot water, and, if necessary, to use anything as a local application to induce the healing process if it is slow—blow either powdered iodoform or boric acid upon them ; then dress with dry cotton. The rectum should be syringed out once a day after the first dressings are removed until the patient is discharged. Retention of urine often takes place, in men especially, after this operation. To avoid any straining, it is best to use a soft-rubber Nélaton catheter until the patient is able to pass the urine.

Patients will often say to you about the time the ligatures are separating that they notice some blood in their actions. This frequently alarms them, because they think "the disease is coming back again." We should anticipate this by informing the patient that it may take place. While the patient is under your observation have him assume the recumbent position. While feeling very comfortable on the third or fourth day, he will be very desirous of sitting up or walking around the room. Impress upon him the absolute necessity of remaining in bed, for, if he should take any exercise, it will be noticed that the parts take on an inflammatory action. Some authors suggest that after the first week the finger should be anointed and passed into the bowel every day to make sure that no contraction results. I think that this habit would keep up an unnecessary amount of irritation and accomplish very little good. In my practice I have never found it necessary. It is an ugly one, to say the least of it, and I think it unnecessary.

Complications.—Internal hæmorrhoids are frequently complicated with other diseases of the rectum.

Case.—A young lady, about eighteen years of age, was operated on for hæmorrhoids by me, and the case progressed favorably until about the time I thought she was well enough to be discharged. A messenger came hurriedly to my hotel and said to me that my patient was in great pain and fright,

for the reason that there was a large mass protruding from the rectum. On my way down to her house I conjured my brain as to what the matter could be. She was lying in a strained position, being afraid to move for fear some accident would happen; and when I inspected the parts I saw protruding from the anus a tumor the size of a walnut, having very much the appearance of a large internal venous pile. By running my finger alongside of it into the rectum I felt a pedicle, and traced it for two inches up the bowel where it was attached. I recognized, of course, that it was a polyp that had escaped my observation at the time of doing the operation. I was not so much to blame when it is remembered that these growths are frequently held high up, perhaps in the sigmoid flexure, their pedicle allowing them to float. I ligated the pedicle without trouble and clipped the polyp off, and yet I felt some embarrassment for the reason that I thought my patient would think that it should have been attended to at the time I operated on her for piles. If she did so think, she certainly thought right, and my only excuse to her was that we could not do *too* much ligating at one time.

I cite this, therefore, to show that internal piles may be complicated with polyps, with fissures or ulcers, with fistula, impaction of fæces, or with cancer. If these complications are met, it is best to relieve, if possible, each and all of them along with the operation for internal hæmorrhoids, save, perhaps, cancer. It is not necessary to detail the operations necessary to each individual case, as they are taken up in a separate chapter.

One of the most serious complications may result from the operation itself. I allude to the sphincter muscle when it is in a feeble condition either from age or disease. Therefore it should always be borne in mind that in such a subject dilatation should be very carefully practiced. A patient may not censure you for a failure to cure him of internal hæmorrhoids, but he would always blame you if you left him in a condition the result of incontinence.

The authors frequently mention that a contraction of the

parts may follow the operation for internal hæmorrhoids, and therefore that this amounts to a complication; but, in my experience as a rectal surgeon, I have never yet met with that complication, nor do I usually practice dilatation after the operation with either the finger or an instrument, nor do I understand how it can take place in many cases. The contraction of tissue by a cicatrix is just as likely to draw the parts slightly outward as to form a contraction inward. At least I have never met with these cases as are detailed by some authors. Sepsis, including pyæmia, erysipelas, etc., is said to be a complication following this operation; but if it is done under strict antiseptic precautions, it will not follow.

Hæmorrhage following Operations for Internal Hæmorrhoids.—I do not believe that if the operation for internal hæmorrhoids is done by the use of the ligature, properly applied, hæmorrhage would occur once in a thousand times. Hæmorrhage following this operation occurs from three sources: (1) Oozing from the cut surfaces in the tissues, which is primary; (2) slipping off of the ligature; (3) cutting too quickly through. The first condition may arise from the fact that the gauze and the cotton have not been firmly packed and closely held to the parts. I believe that there is some art in applying the bandage to effect a close and tight compress. My method is this: Taking a four-inch bandage, eight feet long, I first tie it around the patient's body, just above the pelvis. The knot is made in front, leaving the short end six or eight inches long. The bandage is then passed between the legs and smoothly adapted over the cotton and then passed under the bandage around the waist at the back, then carried backward over the same line to the front again, and, passing over the front of the bandage, carried back the same way as before, being smoothly applied over the cotton each time and then tied to the short end that is left. No pins are used. It can be smoothly and tightly applied, thereby preventing any hæmorrhage from the cut surfaces.

Hæmorrhage may result from the slipping of a ligature if

it has not been securely placed, or if the pile has been cut off too close to the ligature.

CASE.—A young man came into my office complaining that he had just noticed the descent of a pile. I examined him and found a soft hæmorrhoidal tumor presenting with a narrow base. I slipped a thread around it and ligated the pile. With a pair of straight scissors I then cut it off, the little stump slipping back into the rectum. Being busy, I sent him into another room to lie down on the couch until I could see him again. I directed my assistant to remain in the room with him. In about one hour I was informed that he had grown restless, remarking that he felt all right and that he would go home. He took a street car and started home, which was a distance of at least thirty blocks. When he got into his door he was so weak that he fainted, and his wife, in pulling off his boots, discovered that they were full of blood. In a little while he was able to tell her what had taken place, when she immediately telephoned me that he was bleeding. Thinking that it did not amount to much, I delayed going until I received a second summons. Just then a doctor friend came in. I told him the circumstance, and he drove with me to the house. When we arrived there, we found the man in nearly a dying condition from hæmorrhage. He had passed in two evacuations at least a gallon of blood. The extremities were very cold, profuse sweat was over the body, his pulse could not be counted, and he was speechless, looking indeed like a dying man. It was after dark, and we had only a coal-oil lamp at our service as a light. While some one held the lamp I divulsed the sphincter, and could see the pumping of a vessel at the point where the ligature had slipped off. With a long artery forceps I secured it, and, by the aid of my doctor friend, put a ligature round it. This stopped all bleeding and the man made a good recovery.

The case shows how a small operation may result disastrously if not properly attended. In my experience of sixteen years in this special line of surgery, I have met with but one case of secondary hæmorrhage. It occurred as

follows: A gentleman came to me from Frankfort, and was operated on for an ordinary case of internal hæmorrhoids. Everything did well until the seventh day. The evening of the sixth I was at the infirmary, and he said to me that he had been nauseated all day, and he looked very pale. I did not, however, put much stress upon it. I was sent for at eleven o'clock the next day to see him. His remark to me as I went into the room was: "I feel just as I did when I took chloroform. I am very dizzy." I suspected the trouble, and just at this time he said to me: "Please allow me to stand up that I may get the fresh air." He suited the action to the word and was up before I could reply. Then he said quickly, "My bowels are moving," although there was a bandage on him. I had seen by this time, however, the blood trickling down his leg. I thought it best to allow him to sit on the commode, and as he did so over a quart of blood passed. We immediately lifted him into the bed, and I explained the situation to him, telling him that his condition would not warrant the administration of an anæsthetic, and that he must stand what I was going to do, for it was to save his life. I immediately divulsed the sphincter muscle and tamponed the rectum. All hæmorrhage ceased. The tampon was allowed to remain five days and was then removed.

Apropos to this subject, it is well to consider that hæmorrhage from the rectum may occur from a number of causes, and when met is a serious thing to deal with. It is not often that a bleeding vessel can be secured as was done in the case just reported. If any diseased condition exists or the hæmorrhage is secondary, it is a loss of time to look for the bleeding surface. Therefore I am not in the habit of following the directions of many who write on this subject—to stop hæmorrhage from the rectum by hunting for the bleeding vessel or local spot and making application of some caustic, such as nitric acid, carbolic acid, persulphate of iron, etc. Hæmorrhage in this locality is too dangerous a symptom to deal with in this manner.

Causes of Hæmorrhage.—The causes of hæmorrhage from

the rectum may be briefly named as follows: 1. Hæmorrhage following the ligation of internal piles. 2. From ulceration of the bowel. 3. From capillary hæmorrhoids. 4. From a hæmorrhagic diathesis. 5. From the tearing off of polyps. These, in my opinion, constitute the general causes of hæmorrhage requiring surgical interference. Sir Astley Cooper lost a patient from hæmorrhage after ligating a pile. The elder Gross reported a similar case. There are three causes for hæmorrhage following this operation in addition to those already given: 1. The division of a vessel or vessels at the time of operating, which might sometimes follow the operation by clamp and cautery. 2. Puncture of a vessel in transfixing the tumor, the method so strongly advocated by Van Buren. 3. In sloughing of the pile.

But it is not the causes of hæmorrhage that I desire to deal with especially in this chapter, but the method of arresting it. In my opinion, in excessive hæmorrhage from the rectum there are but two ways to be considered for its stoppage: One, ligation of the vessel, or the mass in which the vessel is included. Second, by the use of the tampon.

There are a great many diseases of the rectum requiring surgical treatment; hence it is no wonder that hæmorrhage—both primary and secondary—occurs after these operations. It is recognized that in the division of a stricture of the rectum located as high as four inches, or a finger's length, above the external sphincter muscle, the main branch of the middle and inferior hæmorrhoidal artery is frequently cut. Because of the distance within, the difficulty of reaching the severed end of the vessel is very great. Together with the fact that it is imbedded in a pathological structure, it is impossible to ligate it, and it becomes a necessity to tampon the rectum to stop the hæmorrhage. In operations for fistula in ano the inferior or external hæmorrhoidal artery is often severed, and although it is generally secured during the operation, secondary hæmorrhage sometimes follows. This has occurred in my practice several times in the past few years. It is not infrequent that polyps break off from their delicate attach-

ment and, being fed with a good-sized artery, violent bleeding will sometimes take place. Except in one instance, I have never been able to secure the broken pedicle and ligate it. In these cases the tampon must be resorted to.

The rectum being a favorite seat for cancer, it is not uncommon that hæmorrhage is so violent from the growth as to endanger life. These cases invariably require pressure to stop the bleeding. Several years ago I reported three cases of dangerous hæmorrhage occurring in my practice from artery rupture in the rectum. The tampon was used in two of these cases. Where the hæmorrhage is not excessive, but constant, I am more and more persuaded that such cases are often treated for dysentery, the physician relying on the patient's story, and putting but little stress on the loss of blood, or, as is more likely, looking upon the case as one of "bleeding piles" and leaving it alone, when in truth it is a dangerous condition. Surgeons who have divided fistulous tracts running high up the rectum have been impressed with the great amount of blood that is sometimes lost. Gowland, of St. Mark's Hospital, is so chary about dividing even the mucous membrane of the rectum that he has devised an operation to avoid this hæmorrhage. He explained it to me as follows, to be used in dividing internal fistulæ: It consists in the introduction of a long probe, threaded with a ligature to the very top of the sinus, pushing it through the mucous membrane, then bringing both ends of the thread out of the anus. Over these he pushes a piece of hard-rubber catheter, and, pushing it tightly up the threads until it comes in contact with the mucous membrane, it is secured by a small piece of wood stuck in the end of this temporized clamp.

In case I cut the mucous membrane of the rectum to any extent, I am in the habit of using the tampon to prevent hæmorrhage. Although I have used Mr. Gowland's method several times with success, I have seen one case of proctitis result in such violent bleeding as to require the tampon to stop it. I preferred pressure here for the reason that it would do less damage to the already inflamed membrane

than a caustic. Foreign bodies in the rectum, by their presence, or attempted removal, may result in the wounding of the blood-vessels, in which case either the ligature or the tampon would have to be resorted to. Allingham's method of plugging is, namely: "Having passed a strong silk ligature through your cone-shaped sponge near its apex, bring it back again so that the apex of the sponge is held in a loop of the thread. Then wet the sponge, squeeze it dry, and powder it well, filling up the lacunæ with iron or other astringent. Pass the forefinger of your left hand into the bowel and, upon that as a guide, push up the sponge—apex first—by means of a metal rod, bougie, pen-holder, or a rounded piece of wood, if you can get nothing better. Now, this sponge should be carried up the bowel at least five inches, the double thread hanging outside the anus. When this is so placed, fill up the whole of the rectum below the sponge thoroughly and carefully with cotton-wool, well powdered with the alum or iron. When you have completely stuffed the bowel, take hold of the silk ligature attached to the sponge, and while with one hand you pull down the sponge, with the other hand push up the wool. This joint action will spread out the bell-shaped sponge like opening an umbrella and bring the wool compactly together. If this is carefully done, no bleeding can possibly take place either internally or externally. Half-measures in these cases are worse than useless, as valuable time is thereby lost. This plug should remain in at least a week, and it may remain in a fortnight or more."

I tried this method of tamponing the rectum for several years, and found it a very awkward procedure. In the first place, with only the finger as a guide and your sponge filled with iron or other astringent, it is a most difficult matter to push the sponge into and then up the rectum. Then, after it is fully passed, it necessitates adding additional cotton below it. Again, the iron is very apt, in its effect upon the thread, to destroy it, and thereby you would lose the use of the thread when you desired to extract the sponge. A simpler

and better method than this is the one I now practice. The articles I use for the purpose, and always carry in my case, are: Absorbent cotton, a piece of hard-rubber tubing, a stout cord, and a bottle containing *Monsel's solution.* Beginning at about one inch from one end of the tubing, which should be eight inches long, I begin to wrap firmly with the absorbent cotton for fully five inches. The tampon is made to resemble a double cone in shape, or two cones placed together with their widened ends in apposition. The circumference of the tampon in the middle should be fully six inches, gradually tapering toward each end. The whole tampon is then firmly wrapped with a stout cord which is tied at its lower end, and a double thread allowed to hang out of the anus. It might be said here that the same objection that I preferred to the other method that I described was that the iron would destroy the thread. That is all right if it should do it in this instance, for, if the tampon remains but a short time in the rectum, the cotton becomes so thoroughly soaked with the liquids that it hugs tightly the rubber tubing, and does not separate from it at any effort at pulling. The tampon is now soaked in *Monsel's solution* of iron diluted one third or one half with water. The rectum is quickly syringed out with a hot mercuric solution, the patient anæsthetized, unless too feeble to warrant it, the sphincters are freely divulsed with a dilator, and the tampon pushed up the rectum fully five inches. Pressure is then made on the tubing, and the speculum or dilator then removed. The whole of the five inches of the rectum is distended by the tampon, thereby receiving its pressure and the astringent effect of the iron. The rubber tube answers two purposes: 1. It allows the escape of gases, and the injection of water through it, if necessary. 2. If hæmorrhage takes place, it is at once indicated by the flow of blood through the tube. I prefer this method of making and using the tampon over Allingham's for several reasons besides those already given: 1. His, being made of sponge and pulled down to a balloon-shape, is apt to lose its own proper shape and assume that of a ball, therefore is less likely to exert equal

pressure. By the other method a firm pressure is kept up all the time. 2. In removing the tampon of sponge, you have to rely solely upon the cord, which may pull through or break. In the other, a firm hold can be taken on the solid tubing of the tampon proper, and by a steady pull it comes easily out. Allingham says that this plug should remain in at least a week, and it may be retained a fortnight or more. I am in the habit of allowing the tampon to remain in the rectum but four days, even when it has been put in under antiseptic precautions and drainage allowed through the rubber tube. Sepsis is invited by allowing a tampon filled or saturated with nasty discharges to remain in the rectum, especially so when there is a lesion. This method of plugging the rectum has been used by me for ten years, and I am satisfied that in a number of cases I have saved life by its use. Any one using the one method, and then the other, will see at once the value of the latter.

Mr. Gowland has designed some special tubes, made of vulcanite, shaped like a bougie, seven inches in length and about one inch in diameter. The base terminates in a rim which is perforated so that it can be sewn to a bandage. It is to be seen that a sponge or cotton would have to be wrapped around it, and wool packed into the rectum after it is introduced. I have never had the opportunity to use them, consequently can not decide as to their merit. If sudden hæmorrhage attacks the rectum, from whatever cause, the muscles should be dilated and a quick inspection made of the rectum. If a bleeding vessel can be seen and the parts are not diseased, it is the best plan, of course, to try and secure it by ligature, but I always feel safer, even in instances like this, after I have tamponed the gut.

As a summary, I would desire to say that I have operated over one thousand times for hæmorrhoids by the ligature. I have never had to operate the second time upon the same patient for the affection, have never had an unnatural contraction around the anus as the result of the operation, nor had ulceration or stricture to result. I have had in this time one

case of tetanus, superinduced by a debauch, which recovered, and one case of tetanus which terminated fatally. Have had one case of secondary hæmorrhage occurring on the seventh day, which required the use of the tampon, and one case of primary hæmorrhage, by the slipping of the ligature, which also required the introduction of the tampon. I do not believe that had I used any other method as a constant thing I could report so favorably.

CHAPTER VIII.

FISTULA IN ANO.

It is a question with surgeons which is the most common rectal disease that affects the adult. Allingham, with his vast experience, says fistula is. The records of my books will show that in my practice internal hæmorrhoids are more common than fistula. I believe that if we take them indiscriminately the difference in favor of the one or the other would be very small. Patients are alarmed and look horrified when they are told that they have fistula; when informed that they have piles, they usually regard it as a small affair. Fistula and piles are frequently combined; indeed, one can produce the other. Operations are sometimes done for external piles, and a fistula is left which was not detected at the time. The surgeon should never be content with making a diagnosis of one rectal disease until he has thoroughly searched for any other that might exist. I believe that men are more subject to fistula, and women more subject to piles. Fistula in ano is said to be a disease of middle life, but I have operated for it in the very aged and in an infant three weeks old.

Case.—My friend, Dr. George W. Griffith, asked me to see with him an infant only three weeks old that had some rectal trouble. When we examined the little patient together, we found a distinct external opening about half an inch from the anus, which communicated with the bowel. It appeared to me that it must have been congenital. The sinus was laid open and dressed as is usual in such cases. I believe this to be the youngest case of fistula on record.

Causes.—Fistula in ano is, in my opinion, invariably pre-

ceded by or is the result of an abscess. Now, it is very true that patients suffering from a scrofulous or tubercular diathesis may have the tissue around the rectum break down because of this predisposition, and yet we find it assuming the nature of an abscess. Taking an abscess to mean strictly "a cavity filled with pus," we are to presume that this pus has been produced by one of the four pus-producing microorganisms. To hold to this strict pathology, fistula originating from the so-called "cold" abscess, or tubercular degeneration of tissue, could not be called an abscess at all, and yet for an understanding of the pathology or causes of fistula in ano I think it best to say that the disease originates with an abscess. Therefore the physician should always take the precaution in dealing with an abscess around the rectum to say to the patient or friends that the trouble in a large percentage of cases results in fistula. For, if an abscess is opened, although the patient is given instant relief from pain, if a fistula results he can not understand why you refuse to tell him that such a disease would follow, and he would likely attribute it to the ignorance of the physician and employ some one else to attend to the fistula. When an abscess is of the acute variety it is very painful, and the hard tumor can be easily circumscribed. Such abscess is usually found in robust and healthy people, and especially in those in adult life. The so-called "cold" abscess, or that resulting from a degeneration of tissue, is not painful at all, and can not be circumscribed. This is a dangerous form of abscess. In either form, be it acute or chronic, it should be opened and the contents freely evacuated. It is a difficult thing to say sometimes what has caused the abscess around the rectum. It is true that traumatism might result in such inflammation as to give rise to suppuration, but in many cases patients tell us that no wound or blow or injury of any kind has been received. Anything acting as a long-continued irritant may produce inflammatory action in this neighborhood; therefore it is to be supposed that dry fæces held in the rectum, remaining there or passed with a straining effort, may give rise

to an abscess. That a blow may cause such an effect the following cases nicely illustrate:

Case I.—Some time ago a physician living in the west end of this city asked me to see a gentleman with him who was suffering the most intense agony in the neighborhood of the rectum. Upon arriving at the house, we found him rolling and tossing on the bed—physically a perfect man. He said that a few days previous he had stepped into a saloon to take a glass of beer. While standing in a bent position talking to the bar-tender, a friend came in and, slipping up behind him, dealt him a vigorous kick over the buttocks. He said it hurt him intensely at the time, and he told the man that he had seriously injured him, although it was done in a playful manner. The next day he began to suffer intense pain in the rectum. This continued for several days, and the physician saw nothing externally to indicate an abscess. I introduced my finger through an irritable sphincter muscle, and, about two inches above, detected a large abscess pointing into the rectum. I suggested that we put the man under an anæsthetic and proceed to evacuate the pus. Thinking that it would be best to get an external opening, thereby preventing an internal fistula, I ran my knife alongside of the sphincter muscle, outside and in about one inch, struck the cavity, and let out a great quantity of pus. He was relieved at once of all pain, and the healing process went on and no fistula resulted.

Case II.—I have now under treatment a gentleman with the following history: Mr. G., a farmer, aged forty-five, health robust, was standing on the street conversing when a friend approached him from behind and "bucked" him severely. The kick was received directly over the coccyx. He experienced violent pain at the time and expressed the opinion that he was seriously hurt. Upon his return home the pain was aggravated and he was incapacitated for work. A tumor appeared at the site of injury, with all the symptoms of an acute abscess. He did not consult a physician, expecting every day that the abscess would open without

lancing. At the end of the fifth week he came to my office, and, after examining him, I advised that it be immediately opened. To this he reluctantly consented. In lancing it I discovered that the pus had burrowed deeply, seeking no egress externally. About four ounces of pus was evacuated. I advised him to go home and rest, warning him, however, that he might expect an extensive fistula to result. At this time he had a very bad color, an elevated temperature, and an accelerated pulse. After several days he returned to me in a very bad condition. A large fistulous opening, discharging pus freely, some fever, coated tongue, etc. I advised an immediate operation, which was done. For several days he seemed to do well, but upon the fifth morning he had two severe rigors, which I considered septic. The wound looked badly, and altogether he was in an unpromising condition. At this time Dr. Ap Morgan Vance saw him with me. He continued for some days in this condition, but things took a favorable turn, and he is now out of danger. The wounds inflicted were necessarily large, but are now healing rapidly. The patient carries an accident policy for ten thousand dollars.

It is often said that a constipated habit is one cause of this trouble, and yet we meet it in persons who have been perfectly regular, so far as the bowels are concerned, all their lives. One of the worst cases of fistula in ano that I have ever met was in a society woman of this city who seemed to be angered at herself or Nature for having the trouble. She said she could not understand why she should be so afflicted, because her mother had told her from infancy the importance of having a daily evacuation of the bowels, and she had remembered the injunction all her life, and had strictly followed it. I am inclined to think that diarrhœa and dysentery are sometimes the cause of abscesses by their long-continued irritation of the mucous membrane and the adjacent structures. Foreign bodies which have passed through the alimentary canal and lodged in the rectum, or such as have been pushed into the rectum, may, of course, excite to ab-

scess. Therefore sometimes we can trace the cause of the abscess which we are called to treat, but in the majority of cases I do not believe that we can do so. Some authors speak of superficial and deep abscesses. I believe this to be a good division, especially looking to the treatment of them. An abscess may be small and, being in a location that does not affect the sphincter muscle, may not cause much pain, may break of its own accord, and yet this is the starting-point of a fistula. It must be understood that the great majority of fistulæ are progressive, and, whether they start with a very large abscess or with a very small one, may eventually be a serious affair.

Cripps says: "I would advise any surgeon who may be still in doubt as to the starting point of rectal fistula to keep memoranda of all the cases of ischio-rectal abscess he is called upon to treat, and I will undertake to say more than one half of these end in the establishment of a fistula in ano; and, further, if, when he is consulted by patients with fistula, he will take the trouble to question them carefully, he will find that their trouble almost invariably commenced with symptoms of rectal abscess."

I do not wish to deny that more than one half of the abscesses which originate in the ischio-rectal fossæ end in fistula, but as to its being the starting-point in more than half of the abscesses around the rectum I do not believe. Certainly, if we take into consideration the superficial as well as the deep abscesses, the major portion of them do not begin in this fossa. As to the latter part of the quotation—namely, "that the patient will find that the trouble almost invariably commenced with rectal abscess"—I wish to exclude the adverb and say that the trouble *invariably* commences with an abscess. I have never seen a single case of fistula in ano that commenced in any other way.

There are three varieties of abscesses found in this locality: First, the marginal abscess, situated just at the orifice; second, those which form in the loose connective tissue around the rectum, tolerably high up, in what Richet called

"the superior pelvi-rectal space"; third, those found in the ischio-rectal fossæ.

I believe that the commonest seat of abscess around the rectum is in the loose connective tissue.

CASE.—A short time ago I was called in consultation with a physician of this city to see a patient who gave the following history: He was a plumber by trade, and said that the evening before he attempted to lift a boiler into position, and the weight was so great that it was with the utmost difficulty that he could lift it at all, and during the attempt he felt something give way in the abdomen. He immediately let the boiler fall, and he himself fell to the ground in pain. He was carried to his home and put to bed, and shortly afterward began to refer the pain to the rectum. His physician sent for me the first night, and we saw him together. The patient said that he was suffering a very agonizing pain inside the rectum, which had begun with the accident in lifting the boiler. I inserted my finger, but at no one point did he complain of great sensitiveness. We gave the man a hypodermic of morphine, and, taking his history into consideration, we thought that very likely he might be suffering from intussusception of the bowel. Therefore, to anticipate it, we ordered a brisk purgative, more as a point in diagnosis than anything else. The purgative having no effect at the time expected, I gave him six grains of calomel, to be followed shortly after by one ounce of C. O. salts. The next morning his bowels had freely moved, which cleared up the diagnosis so far as the intussusception was concerned. But the pain in the rectum increased, and it required very large doses of morphine to control it. This man held an accident policy in one of the leading companies, and they, being informed of the accident, sent their own physician to investigate his case. Seeing him at the stage that I have mentioned, no one could tell exactly what nature of injury had been inflicted. After five more days I introduced my finger into the rectum again and felt a well-defined inflammatory tumor, which I at once took to be an abscess, though I could not at that time detect any

fluctuation. We agreed to wait another day for further developments, partly because I did not desire to evacuate the pus through the bowel, for fear of establishing an internal fistula, and yet the tumor was so high up, situated above the levator ani muscle in the "superior pelvi-rectal space," that I feared I would not be able to reach it by running the knife in from the outside of the bowel. So, after waiting two more days, I concluded to go down through the tissues on the outside of the sphincter muscles, and in making the cut I reached the cavity at the depth of about one inch and evacuated a quantity of pus.

This case illustrates two points: First, that, although it was a very large rectal abscess, it was not located in the ischio-rectal fossa; second, that these abscesses can be evacuated from the outside instead of the inside of the bowel, thereby securing good drainage and doing away with the risk of internal fistula. There was a very nice legal point involved here—namely, was this man's rectal abscess due to the attempt he made to lift the boiler, or, had he died of sepsis, would the accident company have contended the point? I would have to affirm that I believed the accident caused the abscess. I have never seen an abscess around the rectum aborted. Suppuration is the result, and the rule should be that just so soon as pus is detected it should be evacuated. I do not like the terms *idiopathic* and *traumatic* as applied to abscesses. In the first place, in regard to abscesses arising in weak persons or in tubercular subjects, the term is really a misnomer, for the contents of such cavities, as I have intimated, are not, in the true sense of the term, pus at all. Sepsis is not to be feared from such, unless they are exposed to the air by an incision; therefore I believe all abscesses proper are caused by inflammation, generally the result of traumatism. In cases of stricture of the rectum we frequently have secondary abscesses which result in fistula; and physicians sometimes make the great mistake of operating for these fistulous sinuses and leaving the stricture. The wounds made would never heal as long as the original cause of this condition ex-

isted, and therefore we inflict upon patients a worse condition than existed before the operation for fistula. I wish also to add that in cases of fistula in ano, complicated by stricture of the rectum, or *vice versa*, an operation upon the stricture will not benefit the fistulæ, nor will an operation performed for the fistulæ benefit the stricture. It is a bad condition of affairs and must be dealt with with a good deal of discretion.

Case.—A railroad man, about thirty-five years of age, of small stature and feeble health, was referred to me for treatment. When I put him upon the examining table I saw all around the anus, in the perinæum, buttocks, etc., a great number of small abscesses, together with a number of openings of fistulæ. I introduced my finger and detected a very feeble external sphincter muscle—indeed, it did not respond to the touch at all—and above it a very close stricture. I was satisfied, by the answers that were given to my questions, as well as by the physical evidences in the case, that the stricture was of a syphilitic origin. Now, this man was in a deplorable condition. It was with difficulty that he could have an action at all, and the discharge of pus from the numerous abscesses was very abundant. His general health had greatly failed him. I took the case under careful consideration and argued thus: If I dilate or break this stricture, he will have no control over his actions at all; if I lay open the fistulæ, the wounds will not heal. So I could see nothing to do in this case but advise a colotomy. This he refused. I contented myself, therefore, in opening the small abscesses and in getting, as far as I could, a free drainage of pus, and suggested that he take a good tonic course of treatment.

Conservative surgery should obtain just as well in dealing with diseases of the rectum as with disease anywhere else, and in cases where we are satisfied that we can do no good by an operation it should not be attempted. The method of dealing with abscesses around the rectum is very simple. If we are waiting for the formation of pus, large and very hot poultices of ground flaxseed should be applied often to the parts and covered with oil silk, to retain the heat. The pain should

be quieted by hypodermic injections of morphine. When fluctuation is detected, the abscess should be opened. The method to be employed here is of some concern. Allingham suggests the following plan: "Place the patient on the side on which the swelling exists, pass the forefinger of the left hand well anointed gently into the bowel, then place the thumb of the same hand below the swelling on the skin. Now make outward pressure with your finger in the bowel, and you render the swelling quite tense and defined, it being, in fact, taken between your finger and thumb. A curved bistoury can then be thrust well into the abscess and made to cut its way out toward the anus in the axis of the bowel."

This is the plan used by him of laying open the smaller abscesses. To my mind, there are two objections to this method. First, the introduction of the finger into the rectum under these circumstances causes intense pain, against which the patient vigorously protests. Second, he makes the cut *toward* the anus in the axis of the bowel. I think it a much better plan to make the cut parallel with the rectum in evacuating the pus, for the reason that it is very desirable that these external openings should not heal until all the pus has drained out and the discharge, which continues for several days, has been given free exit. When the cut has been made parallel across the folds, instead of toward the anus with the folds, the sinus is much more likely to remain open. My method of dealing with deep-seated abscesses is as follows: Getting the patient into a good light, I tell him what I am going to do. Then taking a knife with a good-sized blade—it is not necessary that it be curved—I plunge it into the cavity to its very depth, and as the knife is withdrawn I make an opening two or three sizes larger than that made in entering. My object in this is to get free drainage. I then introduce my finger or the end of the handle of the knife, and thoroughly break up all the loculi. I then syringe the cavity out freely with a solution of bichloride of mercury (1 to 5,000). Then a tent made of iodoform gauze is introduced into the cavity, just as much as it will hold. After the expiration of twelve

hours, I withdraw the iodoform gauze and allow any accumulation to pour out freely. I have used the bichloride solution here first, because I believe it to be a good antiseptic and at the same time a good stimulant to the cavity. However, afterward I substitute another agent—viz., peroxide of hydrogen. Of course, our great object in dealing with cavities of this kind is twofold: First, to stop suppuration; second, to heal the diseased structure. For preventing suppuration, we have chiefly relied upon solutions of bichloride of mercury and carbolic acid. Every surgeon is well aware of the fact that dangers attend the use of carbolic acid in the treatment of suppurating diseases, and the too free use of the bichloride of mercury in large suppurating cavities might not only cause too much inflammatory action, but also produce a general effect upon the system which would be shown in ptyalism. We have in a strong solution of peroxide of hydrogen a substitute for these two without any of their attending dangers. Undoubtedly the best preparation of this agent is Marchand's peroxide of hydrogen. His fifteen-volume solution will retain active germicidal power for many months, if kept tightly corked in a cold place. The price, too, is within the reach of all, being about seventy cents per pound. It can be used, of course, in any strength that the surgeon desires. Marchand has devised a hand atomizer and ozonizer for the purpose of using the agent in an easy manner.

The abscess cavity is injected once a day with this agent, either pure or diluted with water, from three to ten parts, and each time the tent of iodoform gauze is pushed gently into the external opening, but so as not to fill the cavity. As the healing process goes on, a less amount of the gauze is used. If large rectal abscesses are treated in this manner, the number of cases of fistulæ will be greatly reduced.

Fistulæ in ano have been divided into four varieties: 1. Complete fistulæ. 2. Blind external fistulæ. 3. Blind internal fistulæ. 4. Horseshoe fistulæ.

I can not say that I like this division. Too much stress is put upon the varieties by many physicians. I allude more

especially to complete fistulæ and the necessity of finding the internal opening. It is surprising to hear patients announce the fact that an operation has been refused them because the internal opening could not be found. It often occurs that patients say that the doctors have searched many times in vain for this internal opening, and at last have given it up and declined to operate. What this has to do with the operation for fistula in ano I must confess I can not understand, and yet authors have taken great pains and teachers go to a great deal of trouble to explain how to find this opening. A very favorite plan is to inject the external opening with some colored substance, iodine or something else, and then have something on the inside of the bowel that it will discolor, and, when it is seen, they are able to say that an internal opening exists. Now, admitting that they are so desirous of finding this opening so that it may be included in the cut made for fistula, I would answer this argument by saying that if during the operation I introduce my grooved director and fail to find any internal opening, when one really exists, I push the instrument through the mucous membrane, then divide the tissues upon it, and search up the bowel from the cut, allowing the director to go as high as it will. Then, dividing again, we of course include any internal opening that might exist. Again, I would say to those who would introduce the director into a complete fistula, and allow it to pass through the internal opening, then making a division of the tissues, that the operation for fistula is not complete unless they search higher up the mucous membrane from the bottom of the cut, because an additional little branch may run up in that direction.

Case.—Several weeks ago a gentleman came to me from a Northern city to be examined, he said, for fistula, remarking that several surgeons lately had him on the operating table under the effect of an anæsthetic, and, because they could not detect the internal opening, they did not operate upon him. I would not have believed this story except that I had had many patients to tell me, in substance, the same thing. I placed him on the table and discovered a very small exter-

nal opening up in the perinæum, which ran toward the bowel about one inch in depth. It did not go into the bowel. I said to him: "I do not care to examine you any further, but propose to operate on you whether I can find any internal opening or not." He consented, and I did the operation the next day. The probe passed down, while he was under chloroform, to the mucous membrane, and I pushed it into the bowel, and then, substituting a grooved director, I incised the tissues and finished the operation according to rules laid down. He made a good recovery.

Case.—A physician living in Kentucky brought an official of his county down to me for an "opinion" in a case of fistula in ano. In my consultation room the physician told me that he had had this patient in this city once before to see a surgeon, and that he searched for a long while by many different methods to find the internal opening, but failed to do so, and no operation was done. He then remarked that, after going home, he had tried upon many occasions to pass the probe into the bowel, but could not. I replied to this statement of the case that my consultation would amount to very little, for I paid no attention to finding an internal opening of a fistula, if an external opening existed; that that could be done when the operation was performed. The patient was taken back home, and I learned afterward that the country physician operated on him.

Now, the point I wish to emphasize is, that too much stress is put upon the finding of this internal opening, and that it is not necessary to worry one's self about finding it, for it amounts to nothing, so far as the operation is concerned, whether it is found or not. My practice in operating for fistula in ano is to make a cut through the main sinus at first, and then hunt out every single sinus that may exist. Upon this point, too, I want to be very emphatic. Van Buren was inclined to think, especially in the first edition of his work, that the inflammatory condition that was set up by the division of the main sinus would eradicate or heal any remaining branches. I am positive that this is not true. If a

fistula in ano has one main channel and six smaller branches, and if the main channel and five of the branches are divided in the operation, and the sixth branch is left, I am sure that in the majority of cases a good result would not obtain, from the fact that the sixth branch would not be closed. It must be remembered that these fistulous tracts are lined by hard cartilaginous material—the so-called "pyogenic" membrane. It has no vitality, is very tough, and will not heal unless freely divided at the bottom and the top or scraped out. Of course, the idea that this membrane was pyogenic was a mistake, for pus is not a secretion, and this substance does not secrete at all. I recall a case that Allingham, Sr., detailed to me a number of years ago, which was about as follows:

A lady of wealth, living on this side of the ocean, had her fistula operated on by a distinguished surgeon in this country, but noticed that after the wound had healed pus still discharged from the rectum. The surgeon did the second operation on her, laying open the tissues in about the same place and manner; and when the second healing took place she still noticed, months afterward, the same discharge of pus from the rectum. She then concluded to cross the ocean and consult Allingham. As is his most excellent custom, he carefully searched inside of the rectum for a cause of this condition of affairs, and he found, beginning at the end of what was the original cut for fistula, a small opening which ran up the gut about one inch. He introduced a small director into this channel and laid it open, after which the woman got well.

Of course, it can be easily seen that the mistake the American surgeon made was not to lay open the sinus that ran up the mucous membrane from the entrance of the internal fistula. I believe that it requires a more careful surgical operation to cure a complicated fistula in ano than almost any other surgical disease. Even when we are the most careful and do the most cutting, tracing up every sinus and attending to every detail and minutia of the operation, we find sometimes, when the healing process is complete, that the disease is not eradicated. It comes nearer to getting the

surgeon into disrepute than to lose a case after an abdominal section. Another thing that I wish to impress is, that, as far as possible, the surgeon doing the operation should have the patient under observation until the healing process is accomplished. If he leaves his cases in the hands of others to treat after the operation is done, he will have many cases of failure to report. To show how far the patient can be neglected after this operation, I mention the following case:

CASE.—I was called to a small town in an adjoining State to do an operation for a very deep and complicated fistula. I did the operation under as much antiseptic precaution as I could, considering the circumstances, but during the operation a great deal of hæmorrhage took place, particularly from the bottom of a very deep cut through and into the left buttock. A great amount of tissue was trimmed away and a space was left nearly large enough to admit my hand. I had an aseptic sponge with me, which I placed at the bottom of the wound, and packed absorbent cotton over it. Then placing a bandage, I left for the city. I was requested to come back to see the patient in about ten days. I did so, and was told that the wound had been carefully cleansed at the end of the third day, all dressing removed, and the injections used as directed. The man being large, the parts naturally fell pretty closely together when the dressings were removed. I took out the cotton which had been inserted that morning, but there was more welling up of pus than I liked to see, which could hardly be explained. I was about to redress the wound when my finger detected something at the bottom which did not feel like granulating tissue. I introduced a long pair of dressing forceps and, catching hold of it, I withdrew what proved to be the sponge which I had placed in the bottom of the wound on the day I did the operation. I quickly threw it out of the window, that the patient might not see it, and it was explained by the doctor telling me that he had neglected to remove it, consequently it had been in the wound for ten days. Of course, this greatly retarded the healing process.

I more and more believe that the good results in this opera-

tion are due as much to the careful treatment of the wound as in the operation itself. Although I accept the divisions made herein of the varieties of fistula, I sometimes think that the term fistula in ano should be dropped. In the first place, fistula in this locality has very little to do, from an anatomical point of view, with the anus; and, secondly, many fistulæ that we meet in this neighborhood have no connection either with the rectum or the anus. There is a variety of this sort, although it is exceptional, which is sometimes met by the rectal surgeon. I allude to fistula that originates over the sacrum and extends either upward or downward, but, as far as the operation is concerned, it has nothing to do with the rectum, and yet falls within the domain of the rectal surgeon.

Case.—Dr. K. sent for me a short time ago to see a Catholic priest who was suffering from fistulæ. An examination revealed the fact that there were two external openings—one located over the sacrum, and one over the last lumbar vertebra. Introducing a probe into either one of these, it could be felt that the spine was crossed by the sinus or sinuses, but that they did not reach within several inches of the anus, and had no connection with it. An operation was done the next day, under chloroform, which consisted in laying open all the sinuses, trimming off all the edges, and scraping out thoroughly the base of each tract. A very large and ugly wound was made. The case was taken charge of by his excellent physician, who was also a good surgeon, and a splendid recovery took place.

I suppose my record book will show fifty such cases of fistulæ located in this region, and yet under the general variety of fistulæ in ano they are not classed at all. It must be understood that the same condition of affairs may exist in other locations around the rectum and yet not involve the rectum, as, for instance, in either buttock. It would be very bad surgery to push a director down into the rectum and extend the cut through the same, under the idea that it was a fistula in ano, and that it had to be so operated upon; and it may seem strange to say that this thing is ever done; but I

know of a fact that it has occurred quite a number of times. To consider, then, the varieties: Complete fistula is said to be one where the sinus extends from an opening on the outside of the sphincter muscle through the mucous membrane into the rectum. The fistula is said to be a blind external one where there is an external opening without a corresponding internal opening. An internal fistula is where there is an internal opening and no corresponding external opening. The fourth variety has received the name of "horseshoe" from its resemblance to one, there being generally but a single opening into the bowel at the back part, while there may be two openings through the skin, one on either side. Frequently in this variety of fistula we have many branches running off from the main branch, which makes a complicated condition of affairs, inasmuch as we have to consider the safety of the muscles in doing the operation.

Complete Fistula.—It is said by most authors that this is the commonest form of fistula in ano, and yet if we would take the experience of physicians in locating the internal opening of a fistula, we would suppose that the external variety was the commonest. Of course we attribute this to the fact that it is very difficult to find the internal opening of a complete fistula. Some authors go so far as to say that all external fistulæ have a corresponding internal opening, yet experience will teach that this is not the fact. As I have said, I do not believe in placing so much stress upon the finding of the internal opening, and I certainly would not abandon an operation for fistula because it could not be found. It is very well, however, to study its situation. I take it that the formation of the original abscess is responsible for the establishment of both openings. As we have said, pus will burrow, and an abscess being a cavity filled with pus, it is very natural that in seeking an exit it should go toward the point that will offer the least resistance. Therefore the situation of the abscess has very much to do as to where this point of exit will occur. If the abscess is a marginal one, as the French say, it will be very apt to open just within the verge of the anus

through the mucous membrane or externally through the skin on the outside of the sphincter. If it is an abscess located in the "superior pelvi-rectal space" above the levator ani muscle, it will open through the mucous membrane into the bowel proper. If it is, however, located in the ischio-rectal fossa, the pus makes its way to the surface through the space of least resistance, which is usually both toward the surface of the skin over the fossa and inward to the space between the two sphincter muscles. A physician who is called on to attend a rectal abscess should keep in mind these points from the fact that it is for the well-being of his patient at least to prevent the sequel, which would be fistula in ano. If left to itself, an abscess originating in the fossa would likely break internally; but the physician, recognizing that this is the most serious form of fistula, will, as has been recommended here, open the abscess externally, thereby preventing the breaking of the abscess into the bowel. It is a matter of some concern as to where this internal opening is located, on the supposition that it exists. Physicians are in the habit of searching too high up the bowel to find it. Its usual location is between the two sphincter muscles, and the reason for it is that the least power of resistance is offered here to the abscess's forming in the ischio-rectal fossa. Another error that we fall into is that we suppose fistula in ano to be a narrow and close channel communicating from the outside with the inside of the bowel. Such fistulæ as these are seldom found, but upon close inspection it will be noticed that not only diverging from the main sinus along its route are additional branch sinuses, but also at the end of the original sinus, which ends at the internal opening into the rectum, they may be found. A probe could be swept around under the mucous membrane for perhaps an inch. This will explain why the operation usually advised for fistula, which is the simple laying open of the main sinus, will not effect a cure. In making the examination for either variety of fistula it is very well to use the finger in helping out an opinion. For instance, if we see an external opening in the neighborhood

of the anus, by placing the finger at this opening and running along the route toward the bowel, if a fistulous sinus exists, it can be felt as a strong whip-cord or pipe-stem under the skin, or perhaps deeper in the tissues. If, however, this is not the route that is taken by the sinus, it can be detected in the same manner by tracing it out with the finger. When we have decided upon the line that the sinus takes, it is well now to introduce a probe into the external opening, and allow it to follow in the direction that the sinus takes. If it dips toward the bowel and stops at any particular point, by a gentle manipulation of the probe, or a dexterous move, it may pass farther on. After this is done, the forefinger of the right hand should be anointed with vaseline and inserted into the bowel. This will act as a guide and a firmer pressure can be made upon the probe, and it is very likely that the instrument would be felt just under the mucous membrane. If, after a little endeavor, it does not pass into the bowel, you should be content with your examination, being certain that, when the operation for fistula is performed, the internal opening will be found; and, if not, the probe will be pushed through the mucous membrane and the operation made complete. I certainly would prefer this method to that of injecting milk, iodine, etc., through the external opening, and then trying to observe by a speculum the point at which it flows into the bowel, for I consider this unnecessary. In cases where there are extensive fistulous tracts it is unnecessary to trace them at all, the only question being whether an operation is warrantable, and this is to be determined by the existing complications or by the health of the patient; as, for instance, where fistulous sinuses are the result of stricture of the rectum or perhaps cancer.

Blind External Fistula.—This I consider to be the least harmful of all varieties of fistula. It is supposed to be a tract that begins externally but has no internal communication. Therefore no portion of the contents of the bowel can enter it which would be possible in both internal fistula and the complete variety. It should be taken into consideration that

there is a vast deal of difference in cases of fistula in ano. I have tried to impress the fact that some fistulæ are progressive and some are non-progressive. It may depend entirely upon circumstances which variety we meet. If an abscess has been the result of any special diathesis, we can look for much burrowing of tissue, even if the abscess has resulted from trauma, and in a feeble individual we can expect the same thing. Locality has much to do with it. In superficial abscesses we expect very little trouble. In deep-seated abscesses we expect more, but whether it be an acute or a chronic abscess it should be determined by the physician in charge whether it is a progressive one or not. In this connection I beg to report two cases which will be mentioned in the same line. Two brothers consulted me in regard to a fistula in ano in the person of each. It was a very singular coincidence that the fistulæ were very much alike in both persons. An external opening could be seen dorsally situated, about an inch and a half from the anus. In one the abscess had occurred about six years previous; in the other, about eight years. There was scarcely any weeping from either one of them. I made an examination with the probe and found that there was no internal opening. The sinus felt to the finger as a hard cord underneath the skin. No pain or inconvenience was noticed. They said to me that it was a busy season with them, and that if I thought the operation could be deferred it would meet their plans best. After making up my mind that it was simply an external fistula, lined by a hard cartilaginous membrane, I said to them that there was no danger of much progress of the fistula, and that as they had stood it for six and eight years without any apparent trouble, they could stand it for a while longer. That has been a number of years ago, and, although I have seen the gentlemen a number of times since, they have never alluded to their fistulæ.

Therefore I say that we will frequently meet fistulous sinuses that are not attended with any danger even if they are left, and yet this would be poor advice to give in a general way.

Case.—A young man consulted me for fistula, giving the history of an acute abscess several months before. He was advised to let it alone. But as he had noticed a rapid spread, as he expressed it, of the disease, he came to me for advice. Upon examination, I found a large, patulous, external opening, into which I could introduce my finger, and from which I could trace numerous sinuses. Although this young man was robust in appearance, I suspected that this fistula was tubercular in character and was rapidly extending. I advised him to have an operation done just as soon as possible. He consented to this, and in doing it it was remarkable the amount of tissue that was involved. Sinuses were found running in different directions, which terminated in what appeared to be a cavity which drained itself through these channels, located in the buttock. A very extensive operation had to be done for his relief.

Another mistaken view that patients sometimes take, and are backed in it by the advice of the family physician, is to have this external opening healed. And here comes the objection to the injection plan as applied to sinuses. I am sure that much more detriment is done to patients than good in following out any such advice. Charlatans are in the habit of applying some caustic to the external opening of fistulæ and thereby causing them to heal over, and persuading the patient that he is cured of the disease. Now, in reality, he is made much worse by this procedure, for, if the external opening is closed, there being no internal opening to the fistula, the pus, serum, or what not, is confined in this channel, and it naturally seeks an exit; consequently it burrows in different directions. If a case of this kind is watched while under any such treatment, at the end of several months it will be observed that there are a number of channels, whereas in the beginning there was only one. I have seen many of these cases that have come to me from the itinerants who have been under treatment, paid their money, and been discharged as cured; and afterward, their trouble reappearing, they were referred to me for treatment. I always say to the patient

who has an external fistula, and because of circumstances can not be operated on, that he should make it a point to keep the sinus freely open, and in the case of traveling men especially, I provide them with a little probe that they themselves can each day insert, thereby evacuating the contents of the sinus and preventing any accumulation within the channel. Persons may suffer from this variety of fistula and scarcely know it. They will tell you of the original abscess and that it healed, and, to their mind, they had entirely recovered. Perhaps they will add that occasionally they have noticed a slight weeping at a certain point, but when you come to investigate you can not find the point at all. I have known cases of fistulæ operated on where the original sinus had escaped notice entirely. The orifice is often so very small that it will escape even a rigid examination. A fold of skin may embrace it, or it may be found hidden under an external tag. A favorite site is along the perinæum, perhaps covered by the scrotum ; but, to avoid mistakes, a careful search should be made in every instance until the opening is found. Another mistake sometimes made by surgeons is to operate upon the channels that are easily discovered, which are in reality but branches of the main sinus, and yet this original tract is never touched at all, or, in other words, is overlooked.

Case.—A gentleman from Texas had been under the advice and treatment of an advertising physician for eleven months. During this time he had performed eight or ten different operations upon him. Although the doctor (?) had advertised that he never used the ligature, each operation that was done on this man was by the application of a silk ligature, which was verified by my examination of him afterward. He was seen on the street one day in a crippled condition by a worthy physician of this city, who had been an old schoolmate of his. In the conversation it was revealed that this man had been away from his home under treatment here for nearly a year, had been broken up in business at his home, and had despaired of ever getting well. He was ad-

vised by the physician to leave the charlatan and seek my advice. When I examined him a very bad condition was observed. He had as many as five large and deep suppurating wounds around the rectum, caused by the cutting through of ligatures. Through two other sinuses the silk thread was still hanging. Upon a careful investigation of his case I detected, about two inches up the bowel, a large and angry-looking internal opening, which proved to be the original sinus in this case. I told him that I could not do anything looking to his relief unless he took an anæsthetic, and allowed me to do what I thought was proper. After consulting his physician friend he concluded to submit to my advice. After a little preparatory treatment he was put on the table for an operation. The first thing that was done was to lay open the main channel, which began in the rectum and ran out into the perinæum, approaching the skin close to the scrotum. The wounds that had been made by the different ligatures were then searched, and at the bottom of them several sinuses were found running in different directions. These were freely laid open. The edges of all the wounds were carefully trimmed away, and the whole surface dressed according to antiseptic rules; and at the end of three months this man was discharged cured, though a great deal of the scar tissue remained. Although the sphincter muscle was divided twice, he was afterward able to retain his fæces and to have his actions with comfort. He has paid me several visits since then, simply to show me in what excellent health he is.

This case will go to show the necessity of seeking out every sinus that exists. It also goes to show that a very extensive cutting is sometimes necessary to effect a cure.

Blind Internal Fistulæ.—These fistulæ are of more importance than either of the other two kinds. If a fistula is complete, notwithstanding that it has an internal opening, it will drain itself to a certain degree at least of the fæcal matter that passes into it from the bowel. If the fistula be an external one, it has no communication with the bowel, consequently nothing of this kind can pass into it. But if it be of the blind

internal variety, these discharges find a lodgment in the channel with no point of escape, consequently it is being continually irritated. It is no wonder, then, that patients complain more of this variety than of either of the other two. Sometimes they will come to you saying, they believe that they are suffering from an impending abscess. Upon examination, you will find a small indurated tumor in the tissues or just under the skin, and yet if you allow these patients to remain away from you for a few days, they will tell you that the tumor has all disappeared, and that they are suffering no further inconvenience. This condition of affairs has been brought about by the passage of liquid fæces through the channel, causing a slight inflammatory action, which has afterward subsided by the tumor's evacuating itself into the rectum if it contains pus ; but if it is inflammatory, it may be reabsorbed. It is quite a good idea in all such cases for the surgeon to make an incision into this small tumor, even if he has no history of an abscess, or can not detect the internal opening of the fistula. It is much better to have drainage externally than internally in all fistulæ. Another point to which I would call attention is, that if the blind internal fistula has existed for any length of time, it is very apt to be complicated by additional branch fistulæ ; therefore, during an operation, it should be remembered that they should be sought for. It is very bad practice to say to any patient suffering from either variety of fistula that his disease is a simple one, for an operation may reveal a very complicated condition of affairs.

Horseshoe Fistula.—In this form of fistula the internal opening is usually found on the posterior wall of the bowel, and from this a tract leads into the ischio-rectal fossa, not on one side only but upon both. Therefore we have one opening into the bowel, and one through the skin on either side. But I have seen this variety of fistula go completely around the bowel without any internal opening at all. This form of fistula requires the most delicate operation to effect a cure. If you follow the channel in its entirety, you have really cut

the tissues away from their attachment to the rectum proper, and therefore the sphincter muscle loses its function; or, if you divide the sphincter muscle twice in the operation, which is the usual procedure, at one sitting, you destroy its function. The plan of operating will be described further on.

The Relation of Fistula in Ano to Phthisis.—The belief among people generally, and with many physicians, is that fistula in ano has some direct connection with the lungs; not with the diseased lung only, but also with it when it is in a perfectly healthy condition. This impression is widespread with patients suffering from rectal disease, and the questions propounded by them are sometimes really ludicrous. I have often been asked if the cure of piles would not result in consumption, and I have often had the objection preferred to curing a fistula that, if the discharge was stopped, it would go to the lungs; and this, too, from persons of splendid physique and in perfect health, suffering likely from only a local sinus caused by the passage of a fish-bone. I find, too, that patients have been prejudiced against the operation for the cure of fistula by some physician who has warned them against it, lest they have consumption as the consequence. Of course, to the learned physician this would be pure nonsense; yet the prejudice exists, and we are forced to use a sensible argument to refute it. Among the old authors the idea was prevalent that the discharge from the fistula in phthisical patients had a modifying influence upon the disease. There are many to-day who believe in this doctrine. This is commensurate with the belief in issues, setons, etc. From this early teaching many vagaries have resulted. Even the old writers, who knew but little pathology, did not believe, nor did they attempt to teach, that the curing of a fistula in a healthy person would result in phthisis, and it is very strange that in this day of research and pathological study there are men who will, by an ill-advised word, consign a person to a life of disgust, if not of torture, by advising against an operation which could do no possible harm, but, on the contrary, relieve him of a life of suffering.

CASE.—Miss K. was brought to me by her family physician suffering from an ugly condition of fistula in ano. He told me that he had had much trouble with the abscess, not that it had caused much pain, but that it was so extensive and refused to break. He also stated that she was of a consumptive family, having just lost a sister with phthisis ; that other members of the family had died with it, and that this girl was suffering from an incipient tuberculosis of the lungs. She had lost considerable flesh, had a bad cough and expectorated freely, but her main complaint was about the fistula. The examination of the rectum revealed a characteristic, large, pouting opening of the sinus. The finger could be introduced into it and swept around in the tissues for a circumference of at least one inch. The skin covering this cavity was very flabby and of a bluish color. Under the circumstances I was a little chary about operating, and yet I realized the fact that this was a progressive condition of affairs, rapidly destructive to tissue, that the sinus would burrow in every conceivable way, and would not only undermine the sphincter muscles, but also break down the health of the patient. I therefore advised an operation. Incidentally I desire to say that in these cases the cough is a serious detriment. It is a well-known fact with surgeons who operate upon the rectum that the succussion from the cough is often so great as to prevent the healing of these wounds. Therefore, in operating upon the phthisical patient, the cough should be looked after. And another point that should be especially enjoined is, that this class of patients should not be confined to bed any longer than is absolutely necessary. I have frequently, upon the first week of confinement, advised them to get out of bed and take a walk, or in other ways gain some advantage from exercise and fresh air. This course will aid rather than deter the healing process. This young lady was etherized, taking it very kindly ; I divided the sinus running into the bowel, and then trimmed away all of the overlapping integument. The bottom of the sinus, or I should rather say the cavity, was freely scarified and dressed after the operation with bichlo-

ride gauze. A stimulating course of local treatment was pursued, the patient allowed to eat freely of good, nutritious food, and to partake of milk punches through the day; and, after five days' confinement in bed, to get out a portion of each day and exercise in the open air. Although a little slow, this wound healed perfectly, and the general health of my patient was rapidly improved. Although it has been two years since the operation was done, there has been no reappearance of the trouble.

It behooves us, then, as physicians, having the care of these cases, to look into the doctrine taught by the old masters in regard to this disease, and see if there be truth in it or not. It can not be gainsaid that consumptives are frequently the subjects of fistula. These fistulæ may be dependent upon the tubercular diathesis, or they may not. A person having diseased lungs may be just as liable to the other causes of fistula—i. e., foreign bodies in the rectum, bruising, trauma, effect of cold, etc.—as persons who are perfectly healthy. Is a fistula in ano in the consumptive patient a thing to be desired, for the reason advanced by the older writers, namely, that the discharge of the fistula modifies the disease of the lungs? If answered in the affirmative, I would ask if it would not be good surgery to produce an anal fistula in phthisical patients, if they were so unfortunate as not to have one? The question at issue is, Shall we operate for fistula in ano in patients suffering from phthisis? Before attempting to answer let us consider what some of the older writers have said on the subject. In 1837, when Busch wrote his work on disease of the rectum, he said: "It is very apparent that a great many fistulæ depend on disease of the lungs; therefore we should not operate on them, else their healing will give rise to the increase of the pulmonary disorder and curtail life." A few years before this Brodie had said: "No operation should be undertaken for fistula when phthisis is present, for one of two things will happen; either the sinus, although laid open, will not heal, or otherwise it will heal as usual and the visceral disease will make more rapid progress, and the

patient will die sooner than he would have done had he not fallen into the surgeon's hands." Sir William Ferguson said that "the coincidence of fistula with disease of the lungs is often remarkable, and a surgeon would seldom be justified in interfering with a sinus under these circumstances." It seems that these really great men were given to theorizing in their day, as many are given to the same thing now. In these matter-of-fact times we want to know if theory is borne out by clinical facts. When Busch tells us that it is very apparent that many fistulæ depend on diseased lungs, and that we should not operate because the healing will give rise to increased pulmonary disorder, he should have established this saying by clinical facts, or his statement is good for nothing. When Brodie affirms that under the same circumstances the wounds will not heal, or if they should heal the patient would die sooner, he should have given us some statistics of operations to prove it. The statement of Sir William Ferguson that we are not justified in interfering with the sinus, simply because the patient has a cavity in his lungs, is not substantiated by facts. Some of these writers say: "Don't operate, because the wound will not heal"; others, that the wound will heal, and that this is the danger. Certain I am that if I operate on any patient, under whatever circumstances, and the wound heals perfectly, I congratulate myself that I have done a good thing. The trouble in the consumptive patient is that the wounds are slow to heal, but not for the reasons usually given. But of this further on. Is there any degree of truth in the assertion made by these authorities that we should not operate on this class of patients? Are their reasons predicated upon facts? I imagine that this view has obtained credence principally because patients who have phthisis, complicated by fistula in ano, often die of the lung trouble; and, if perchance an operation has been done for fistula, the blame has been laid at the surgeon's door, albeit that the life of the patient may have been prolonged and made comfortable rather than been shortened by the operation. No good surgeon would risk his reputation by oper-

ating upon a patient who has rapid symptoms of advanced phthisis—as hectic, sweats, cough, emaciation, etc.—unless there was a strong demand for such operation. But that there are many cases of consumption made worse by an existing fistula there can be no doubt. By curing the fistula the lung trouble will be benefited. There are several questions that should be considered before operating upon the phthisical patient for fistula. 1. Will the wound heal? 2. If the wound heals, will the patient be injured or benefited?

In answer to the first question, there are several reasons for supposing that the wound would refuse to heal: First, when the lung trouble has advanced to a degree of emaciation with cough, there is a bad nutrition of all the tissues of the body; hence the tissues around the rectum are included. The blood-supply to the part is feeble, and the proper return of the same by the veins is impeded. Under these circumstances the effort at repair would be poor. If cough exists, the succussion, as I have intimated, would materially prevent the healing process. A more serious reason than these, however, is to be found in the condition of the parts operated on. The books are in the habit of giving three varieties of fistula—namely, external, internal, and complete—often forgetting to mention the different varieties of these three, and the operation is usually construed to be the introduction of a director and the division of the main tract. Any one who has operated many times for fistula in ano knows how erroneous this is. As has been before stated, very often when one external opening presents itself, if a search is instituted, it will reveal many additional sinuses. Now, this is usually the case when fistula is found in the phthisical patient, not only many sinuses, but cavities of small caliber. If any of these escape notice, the wound does not heal because of the continual flow that is kept up. It would then become a question of importance whether the patient could bear that much cutting, especially if the sphincter muscle is involved. The surgeon alone is to decide. It has been an observation of mine that wounds upon the consumptive heal more readily

than is supposed. I do not refer here especially to fistulous wounds. The character of fistulæ may be very different from those described. I have seen many plain, uncomplicated cases of fistula in people who had phthisis; although, as a rule, the sinus is after the manner described. Then the character of fistula is very different, and it is upon this fact more especially that I beg to differ from the learned men that I have quoted. Without making any distinction, they assert that the fistula must not be touched if the patient has phthisis. Patients are to be left under this general rule to bear their pain and the annoyance of a continual discharge, when they have fistula, perhaps of insignificant proportions, which could be easily cured. But those taking this side of the question do not have to go to the older authorities upon the subject to have their ideas confirmed. Gross said: "All attempts at a radical cure of fistula are inadmissible when there are serious organic lesions in other parts of the body, especially the lungs. In such cases we can not be too cautious, lest in arresting too suddenly a discharge, which has perhaps become habitual, we throw the onus on the more important organ and induce death prematurely."

Erichsen inclined to the idea that a fistula may act as a derivative in these cases, but says that in the early stages of phthisis an operation improves the patient's condition, then adds that an issue should be established in the arm or the chest for a time. These two opinions lead us to consider the second question: If the wound heals, will the patient be injured or benefited thereby? We are to suppose, then, that the patient has vitality sufficient for the wound to heal. Does the healing advance the phthisis? Both from a theoretical view and a practical demonstration, I would answer in the negative. I have operated many times for fistula in phthisical patients, and I have never had cause to regret it. Just as often, for reasons other than those given by these authors, I refused to operate. Is a fistula in ano a derivative for the lungs, as Erichsen intimates? If the principle of the doctrine of derivatives is correct—which I do not admit—this

appears to me to be most far-fetched of all. The fistula in the rectum can have no bearing on the lung in a derivative way. The distance is too great, and there is no anatomical connection—arterial, venous, capillary, or nervous—which could account for it. Hence I can not see what could be *derived* by it. The fistulous sinuses and cavities which exist as the result of the phthisical habit are simply the breaking down of tissue or the rapid degeneration of it. Therefore this is not only destructive, but is also a great waste. Then are we to suppose that, by keeping up the waste and allowing the degeneration of tissue to go on, we benefit an already enfeebled lung, or, by stopping this waste, we are, as Gross says, to hurry on the lung disease? We can not subscribe to this. If there was an overabundance of some destructive material in the body, whose presence was working harm, and by a derivative we could draw it away or waste it, then the proposition would appear reasonable; but here we are drawing from an already impoverished body. Add to this the mental anxiety that exists, besides the loathsome disease, and I am constrained to say that in many selected cases the operation should be done, and that I differ radically from the views herein quoted against the operation. 1. In incipient phthisis the operation is always justifiable, other things being equal. 2. In the rapid progressive fistula an operation should often be done to save tissue and prevent serious consequences. 3. If great cough exists, it militates against the operation.

Bacon (Joseph B.) says: "The general prejudice among the laity against having fistulæ cured has been taught by ignorant physicians, and to disabuse their minds of this idea will take time and concerted action of the profession. It is a common thing to see patients in the hospitals whose viscera have undergone amyloid degeneration, and they have become hopelessly wrecked by a long-continued septic absorption from a fistulous tract that a minor operation would have cured."

CHAPTER IX.

TREATMENT OF FISTULA IN ANO.

THERE can be no doubt that spontaneous cures take place of fistula in ano, sometimes without any interference at all, but usually as the result of a very simple examination with the probe. I am satisfied that I have seen at least a dozen such cases in my practice. Again, one will be surprised, in dealing with large rectal abscesses, where everything points to the fact that they will be followed by fistula in ano, when all symptoms disappear and the abscess heals without trouble, leaving no trace whatever.

The first question that a patient with fistula in ano is likely to ask the surgeon is whether it can not be cured without an operation. To meet the whims of patients, more than anything else, I imagine that the injection plan for fistula or the local application of caustics was first introduced. Of course the objective point in this treatment is to destroy the so-called "pyogenic" membrane by means of the escharotics. Granting that it could be done, the point must be conceded that it is not only slower than the knife operation, but it is equally as painful. Again, injecting into the sinuses an escharotic that will destroy the tissue which lines their internal surface, might incite sufficient inflammatory action to cause an abscess. This plan is a very old one, and the agents used were iodine, nitrate of silver, nitric acid, and in later years carbolic acid. With modern surgeons the plan is nearly obsolete. We find in the books, however, a reference to it, and in some few cases it might do very well to try it. Allingham thinks well of dilating the sphincters, the application of carbolic acid, and the introduction of the bone stud to keep the

wound from healing. Agnew, in his book on the Treatment of Hæmorrhoids and other Non-malignant Rectal Diseases, says: "The treatment by injection, sometimes classified as the 'non-operative method,' has been so successful in the hands of many that it is stoutly affirmed that any case curable by the usual heroic methods is equally curable by this method. Different preparations have been used, chief of all being carbolic acid, ranging in strength from fifty per cent up. In adopting the carbolic-acid treatment, probably the better way, after preparing the sinus, will be to use an eighty-per-cent solution the first time, and subsequently a fifty-per-cent solution, protecting the parts from excoriation by any suitable unguent and absorbent cotton. Hot-water compresses to relieve pain, eucalyptol, calendula, campho-phenique, etc., in the interim. Judgment will be required in not making too many irritant applications and granulation thus hindered for want of rest. . . . As a preliminary step the external orifice should be well dilated with a laminaria tent or other appropriate means, and a fistulous tract explored with a common probe and thoroughly cleansed with hot water introduced through a flexible silver cannula. The cannula is also used for the injection of a five- or ten-per-cent solution of cocaine to obtund the sensibility before the injection of the acid. After the fistula has been suitably prepared for the reception of the acid, the silver cannula, attached to a hypodermic syringe charged with the acid, is passed up into the tract, the finger inserted into the rectum, and the end held over the internal opening, if the fistula be complete, to prevent the acid escaping into the bowel. The cannula is then slowly withdrawn, and the acid gently forced out of the syringe at the same time. The residual acid is allowed to remain in the fistulous tract for a few moments. The tract is then pressed with the finger, and syringed out with a weak solution of acetic acid and injected with oil. Once in two or three weeks is sufficient to repeat the injection of the carbolic acid should more than one application be required. Often one application of a strong solution will be found sufficient to effect a cure."

I have quoted Agnew in detail, first, for giving those of my readers who desire to try the plan an opportunity to do so; and, second, to dissent from the opinion that this is even a good method in any variety of fistula when compared with the other accepted plans. As I have mentioned, no proper gauge can be put upon the agent used. If too little, not sufficient inflammation is excited; and, consequently, no good is accomplished. If too much inflammation is the result, great damage may be done. Therefore, concurring in the idea that if this tough lining could be destroyed without danger to the surrounding tissues, there might be a plan devised by which it could be done, in 1885 I read a paper before the Kentucky State Medical Society, suggesting what I was pleased to call "A New Operation for Fistula in Ano." It was described in the following words: "Taking the ordinary exploring probe, it is inserted into the external orifice of the fistula to determine, if possible, that only one sinus exists. Being satisfied of this fact, I then take a long, slender laminaria tent, and push it gently into the fistulous sinus to the fullest extent it will go. This is allowed to remain for several hours, keeping the patient under observation during the interim, at the end of which time it is withdrawn. The procedure causes but little if any pain. The laminaria tent is preferable to a sponge, for the reasons that it is easier of introduction and furnishes its own moisture, which assists in its withdrawal. After this dilatation I take the smallest urethrotome, having a very small point; closing the instrument tightly, it is pushed gently into the sinus as far as it will go, and then by the aid of the screw attachment I dilate the sinus. When this is done, the turning of the screw at the side of the instrument will cause the concealed knife to protrude at the distal end according to the measurement desired. The instrument is then carefully withdrawn, cutting through the wall of the sinus throughout its whole length. The cut, as will be perceived, has been made subcutaneously, and the pain is insignificant. What hæmorrhage takes place is easily controlled by pressure. In several instances I have turned the instrument and reinserted

it, practicing the same procedure on the opposite side at one sitting. If this is not thought advisable, the patient is allowed to go for several days before repeating the operation, which is to include the other side. The advantages that I claim for the operation are, viz. : Over the injection plan it must take precedence for the reason, as above stated, that the injection of any agent that is commonly used for such purpose does not accomplish what is desired, and is attended with danger. With this instrument both the top and the bottom or each side, if necessary, can be cut through, thereby insuring a good granulating surface, and this too without pain. Over the ligature, either elastic or non-elastic, it possesses the advantage of cutting through both top and bottom or each side of this thick membranous sinus, while the ligature can not possibly go through any portion but the top of the sinus as it cuts its way out, leaving, of course, a callous bottom, which in many cases would refuse to heal, it being a positive rule in surgery, in the operation for fistula in ano, that the bottom of all these tracts must be divided to insure a cure. Salmon used to say, after he divided a fistulous tract, "Now I will make the back cut, which will divide the bottom of the sinus," recognizing, as he did, that unless this was done he would likely not get a good result. Again, in using the ligature, the sphincter muscle or muscles must, of necessity, be cut through by the ligature if the internal opening is above them. In the operation with the instrument I suggest, the muscle is not divided or interfered with. Over the ordinary operation with the knife it can be claimed—1. That this operation dissipates all horror in those patients who dread the knife. 2. That excessive hæmorrhage is avoided. 3. The sphincter muscles are not cut. 4. The patient is not confined to bed or taken from business. 5. The tissues are not included in the operation.

In the majority of cases that I have treated by this method I have done so without the patient's knowing that anything in the nature of an operation had been performed. Exhibiting the instrument to them—the knife being con-

Plate III.

OPERATION FOR FISTULA IN ANO BY MATHEWS'S FISTULOTOME.

cealed within it—they have never known other than that it was a probe. If I find, after waiting a few days, that a sufficient depth was not reached, the instrument is again inserted and the same procedure gone through with. The patient is kept under observation a sufficient length of time to be assured of a perfect cure. One point should be strictly watched, and that is that the external opening is not allowed to heal before the sinus does. Where pus cavities are found, or additional sinuses exist, of course this operation is not advised, but in the selected cases mentioned I am sure that the advantages claimed for it will be realized. A score of cases in my practice attest its value. I encountered many disadvantages in operating upon the fistulous tract with the urethrotome: 1. It was too large to enter the orifice of the sinus, so recourse was had to the laminaria tent. 2. It only cut upon one side, hence required a second introduction to effect a division of both the top and bottom of the membrane. To meet these difficulties, I had my instrument maker make for me a modest little instrument which, for lack of a better name, I call a fistulatome.

Mathews's Fistulatome.

By reference to the cut it will be seen that it is very small, being but little longer or larger than a good-sized probe. It has within it *two* concealed knives. It is probe-pointed and easy of introduction. In the end is an eyelet, which I sometimes thread with a filiform bougie, the object being for it to search out and enter any small branch that may exist when the instrument is pushed to the very bottom by the screw arrangement at the distal end. Both knives are uncovered at the same time. They are of sufficient length to cut entirely through the indurated membrane as the instrument is withdrawn, the plan being to insert the fistulatome as far into the sinus as possible, then uncover the knives by the screw attachment at the end. In a few cases I have injected muriate of cocaine; then done the

operation. However, I have never seen that it did much good. A better plan would be to inject the cocaine subcutaneously alongside the tract. There is so little pain accompanying the operation that I seldom use this agent.

Case I.—Mr. B., a mechanic, referred by Dr. Turner Anderson. After an extensive fistula, with a number of branches, had been laid open, with all the precautions as to trimming the edges, dividing the bottom of sinuses, etc., the wound healed perfectly. He came to my office a few weeks after he was discharged and stated that there was just a drop of something that caused a moisture about the wound. Upon examination, I found a small orifice, located just where the external cut was begun in the operation. Introducing a probe, I found that it entered, fully six inches, a superficial sinus that ran backward and not toward the rectum, and I had evidently overlooked it in the operation. While he was on the examining table in Sims's position I introduced my fistulatome, uncovered the knives at the end of the sinus, and the instrument was slowly and firmly withdrawn. As the knives approached the external orifice I quickly pulled it through the skin. A little bleeding occurred at the time and some soreness was complained of during the week, but at the end of ten days he came back and I could not discover the sinus at all. I watched the case until I was satisfied that there was no recurrence.

Case II.—A woman reported at my clinic at the Kentucky School of Medicine with a fistula in ano, having an external opening about three inches to the left side of the anus. A probe revealed the fact that it communicated with the bowel, the depth of tissue being about half an inch. One of the surgical staff was allowed to do the operation. I did not notice him carefully, but I am satisfied that he simply made the division usually recommended, which was by introducing a grooved director through the sinus into the bowel, and then dividing the tissues upon it, neglecting to make the back cut according to Salmon. The wound healed nicely. She reported back to the clinic, and, to all appearances, the

parts were in good condition; but while she was on the table I took a delicate probe and searched the route of the sinus, and found, at the very beginning of it, that the probe went into the bowel, evidently through the same old tract. My idea was that the tough lining, being left at the bottom, the wound simply closed over it, leaving the channel. This case illustrates the fact that, in using the elastic ligature, which only divides the top of the sinus, this same result might have been obtained. I took my fistulatome and pushed it through this tract until I could feel it upon my finger, which I had inserted into the rectum. I then uncovered the knives, pulled the instrument out, and, in cutting its way, it divided the bottom as well as the top of the sinus. The woman was well within one week's time, and no probe could be introduced.

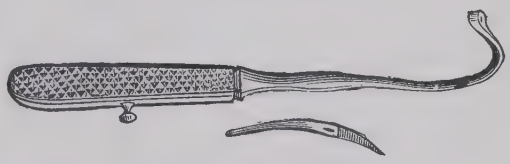
I could cite a number of other cases that have been cured by this little instrument, but will make these two suffice. I want to be explicit in saying that the cases in which the fistulotome will prove of service are limited, and yet I see for it as wide a field as that for the ligature, either elastic or non-elastic. I want to put myself on record, too, that the cutting operation, as usually practiced—which is to divide all the tissues upon the director, trim the edges, cut through the bottom, and lay open every additional sinus—is the one to be preferred in the majority of cases for fistula in ano. It is the means *par excellence* for the treatment of this disease, and I might add that from time immemorial the laity has fought against it. Recognizing this prejudice, the charlatan has been ever ready to play to it, and has, in his pretentious and deceitful way, increased this prejudice. I believe that every surgeon who is in the habit of operating for this trouble will agree to the statement that it is impossible to cure the larger proportion of fistula without the cutting operation. I can safely say that when any other method—such as caustics, ligatures, etc.—is brought into comparison with the knife as an agent of cure of any surgical affection, the preference must be given the knife. It has always been a mystery to the profession why

sensible people would consent to have tumors, etc., burned out by degrees with the caustic, hot iron, etc., in preference to their rapid extirpation with the knife. It is the story of the dog's tail being cut off piecemeal to avoid giving it pain. It might be said that we of the profession too often succumb to the whims and caprices of patients, thereby allowing them to dictate the means of cure. Therefore, in bringing before the profession this fistulatome, I simply ask a fair trial of it, not as a substitute for the operation by the knife, but as a means of curing a few selected cases that may be met with in the hands of any surgeon. Andrews, in his book on Rectal and Anal Surgery, kindly says: "An excellent regular surgeon, Dr. Mathews, of Louisville, has systematized this latter plan and made it more energetic. He dilates the external part of the fistula with a laminaria tent (and then with a fistulatome scarifies the interior), repeating the operation as often as is needful. It is demonstrated by Dr. Mathews on the one hand, and by the experiments of the quacks on the other, that by controlling these two conditions—viz.: (1) the unfavorable effect of the undrained septic fluid within the sac; (2) the tightness of the external opening which prevents free drainage and keeps the sac distended with this putrid pus—many cases will heal spontaneously." Agnew says in his book, from which I have taken occasion to quote several times: "The fistulatome, shown in Fig. 24, is a contrivance which is perhaps destined to take the lead in the treatment of fistula generally. It is constructed that the fine cutting blades close on themselves, while the instrument, which is flexible and probe-pointed, is being introduced, but immediately open on withdrawal, and thus catch up and cut through the fistulous membrane. Who the inventor of this clever device is I have been unable to ascertain, having seen the invention claimed by three different physicians, one of whom speaks of curing seventy-six per cent of all cases treated by one operation—that is, by drawing the fistulatome through the tract once. Cases of long standing require that the instrument should be turned at right angles and drawn through the second time, and pos-

sibly repeated later on, and a tenotome employed to scarify any remaining indolent sinus."

I have taken occasion herein to quote from the report that I made to the Kentucky State Medical Society in 1885, and I at least thought at that time that I was the originator of the plan. I have had no reason since to think that I was mistaken. It will be observed that at that time I was forced to use the small urethrotome, because I had never heard of any two-bladed instrument that had been devised especially for use in fistula in ano. The gentleman that claims to cure seventy-six per cent of his cases of fistula with such an instrument certainly has a better instrument than the one that I have devised, or his successes have far overbalanced mine. But, for the reasons that I have already given, I am satisfied that with any instrument of the kind the cures would be very limited, outside of the character of sinus mentioned.

Several years ago Dr. Frederick Lange suggested the advisability of treating fistula by excision of the entire fistulous tract, the raw surfaces being brought together with sutures, with a view of securing healing by first intention. I can not do better than quote his own report: "I described a certain method, but my experience at that time was derived from a few operations, the results of which were only partly successful, though encouraging. The first operation was performed two years ago upon a lady who had a deep-seated fistula, the internal opening of which was situated two or three inches above the sphincter. She was perfectly cured in two weeks. Since then I have had about a dozen cases in which the extent of the lesion and the gravity of the operation varied, the results being as follows: In four cases primary union occurred without suppuration. In three, a similar result was obtained with but slight suppuration. In four, the wound healed by granulation in a shorter time than it would have done after one



Bush's needle-holder.

of the old operations. In one instance I did not sew up the wound at all on account of inflammatory infiltration of the edges. In another, that of a gentleman whom I had treated during the acute stage of a very extensive gangrenous periproctitis, there was so much cicatricial tissue that I did not venture to excise at all for fear of removing so much of the muscle that incontinence might result. This patient has still

Needles in handle.

an internal fistula which causes no inconvenience except a slight discharge. My technique has been essentially the same as that described by me before—viz.: excision of the entire fistulous tract, together with all the lateral sinuses, such as not infrequently exist in the cellulo-adipose tissue above the sphincters, and union of the deep tissues by means of buried sutures of iodoform catgut, as well as accurate adaptation of the edges of the mucous membrane. The field of operation is constantly irrigated with boro-salicylic solution. The edges of the integument I prefer to unite by only a few sutures in order to allow drainage of the first secretion. Opium is administered during the first two days. After the second day the bowels are moved easily with injections, a sitz-bath being used after defecation. I performed this operation only once in a case of fistula of tubercular origin, the result being perfect. There was a large shallow sinus which did not communicate with the rectum, a condition which in my experience is not infrequent in tuberculous fistula. In the Medical Record of June, 1886, Dr. Stephen Smith published a paper on this subject, in which he stated that in 1879 he conceived the idea of treating fistula in this manner after reading in Dr. Emmet's book a description of that gentleman's plastic operation upon the perinæum. At that time Dr. Smith excised the granulating surface of a fistula that had been operated on unsuccessfully six months before. Consequently that operation was scarcely applied to a fistula proper. He does not state just when he adopted the method described by him, but if it was

immediately after the operation above mentioned, he was probably the first surgeon to practice it. I take the liberty of claiming priority in my description of the details of the operation, and especially the use of antiseptic precautions, which differs in no essential feature from that given by him."

I take this amount of space to devote to this operation simply that justice may be done Dr. Lange, as I have seen it stated several times that some surgeon in Berlin claims priority in this operation. I have quoted from the proceedings of the New York Surgical Society, at its meetings of January 12 and 26, 1887, and it will be noticed from Dr. Lange's report that he says the first operation was performed two years before, which would be in 1885. In a paper read before the Mississippi Valley Medical Association, in 1889, I took occasion to call the attention of that body to Dr. Lange's operation, and reported three successful operations done by myself, according to his plan. Of course, there are many cases of fistula in ano which could not be successfully treated in this manner. It is so often the case that such an amount of diseased tissue has to be cut away to establish the healing process that it is impossible to bring the edges in apposition; but where such a thing can be done, after the bottom of the sinus or sinuses is divided or scraped, and especially if strict antiseptic precautions are practiced, this operation is to be advised. We all know how long and tedious it is for the healing process to take place by granulation in these cases. Therefore I am inclined to think exceedingly well of the operation as suggested by Dr. Lange.

The Operation for Fistula in Ano by the Knife.—There are but two other operations looking to the cure of fistula in ano that are worthy of consideration—viz., the elastic ligature and the knife. I have already stated that when these two methods are contrasted I much prefer the latter, but I wish first to call attention to the fact that the description given of the operation by the knife, by the majority of the general surgeons who have written about it, is not only incomplete but very misleading. Hamilton, in referring to the operation

in his most excellent book on the Principles and Practice of Surgery, says: "The probe, or somewhat flexible grooved director, being now thrust into the rectum and brought out at the anus, the operation is completed by dividing the intermediate tissues. Having cut the sphincter, it only remains to lay a small piece of lint between the margins of the wound and place the patient in bed."

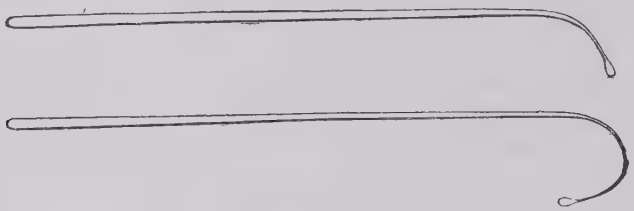
To illustrate how erroneous this advice is, allow me to cite a case: If an abscess in the ischio-rectal fossa has left a sinus which runs directly into the bowel, and from this a branch fistula runs out into the perinæum, and another diverges from the main channel into the buttock, no such operation as is described by Hamilton would effect a cure. It is the smallest part of the operation to lay open the tissues which lie over the main sinus. How often it is that the surgeon is disappointed in the wound's refusing to heal after an operation for fistula, and an investigation reveals that it is due to a small sinus or pocket that has been overlooked! I am sure, after a long experience in dealing with this operation, that in the majority of cases operated upon, if a single sinus is left, a good result will not be obtained. In other words, the inflammation excited will not be sufficient to eradicate the branch fistula. The flaps or thin edges of the wound alone, if left, would prevent good union.

Case.—Mr. L. F. S. had submitted himself for treatment to an advertiser who claimed not to use the knife, caustic, or ligature in the cure of fistula. He had been under constant treatment for several months when he discharged his surgeon (?) and came to me. Upon examination, I found that a number of cuts had been made, if not with a knife, certainly with the ligature, and that they showed no disposition to heal. The edges of the wounds fell into the cut surfaces and were a source of great irritation. I discovered in the perinæum an indurated sinus, which proved to be the oldest, or the original one, but had been overlooked by the gentleman who had him in charge. The patient was prepared for the operation, put under chloroform, this sinus divided, all the

edges were trimmed thoroughly, and the wounds dressed antiseptically. He made an uninterrupted recovery and was discharged in a short time.

This case clearly demonstrates two propositions: one, that if additional sinuses are left, a cure will not be effected; two, that anything less than a free cutting operation would have failed to cure. Before doing an operation for fistula in ano by the knife, it is necessary to give the patient some special treatment. We will consider, first, that the trouble exists in the otherwise healthy individual. In this, as in all other surgical operations, the alimentary canal should be thoroughly cleansed by the administration of a free cathartic or aperient the day before the operation. The evening preceding the operation he should be instructed to take a purgative pill, not an aperient. The preference is given to the pill for the reason that only one, or perhaps two, actions will result, whereas in the aperient a loose condition of the bowels exists and they will, perhaps, move during the operation. If the patient be accustomed to drinking alcoholic or malt liquors, it is quite a good idea to administer, a day or two before operating, a calomel pill. The evening before, he should be directed to take a hot bath. On the morning of the operation he should do without his breakfast, except perhaps a glass of milk or coffee, and be directed to take another bath, after which he is to put on clean linen and he is ready for the operating room, after having his bowels cleared by an enema of hot water. The parts are then shaved and washed thoroughly with a bichloride-of-mercury solution (1 to 3,000). He is then anæsthetized, when the sphincter muscle is thoroughly distended with a speculum and the rectum is syringed out with the bichloride solution. Considering now that the patient is ready to proceed with, he should be placed in proper position. After trying the different ones suggested by the authors, I have long since concluded that on the left side, with the knees well drawn up, the left arm being pulled behind the patient, is the best. The instruments necessary for the operation are one tenaculum forceps, two

rectal probes, one four-pronged forceps, one curved bistoury, three grooved directors varying in size, one pair of stout scissors, and one straight, heavy knife. Frequently we have not the number of assistants that we desire, and for this reason I devised a special forceps or clamp, which has already



Rectal probes.

been described under the head of the Treatment of Hæmorrhoids, which consists of four prongs instead of three, and is made to lock. By catching the tissues, they can be pushed aside, still in position, without the aid of an assistant holding them.

In a bowl on the table are the sponges in the bichloride solution (1 to 5,000). I much prefer the sponge made of surgeon's cotton, wrapped and sewed in antiseptic gauze, to the ordinary sponge. I am in the habit of throwing them away after the operation, thereby saving the necessity and trouble of disinfecting the sponge. The instruments are in the pan of carbolized hot water. The attendants as well as the operator have been made aseptic.

Method.—Supposing the case to be one of the external variety, the grooved director is inserted into the orifice pre-

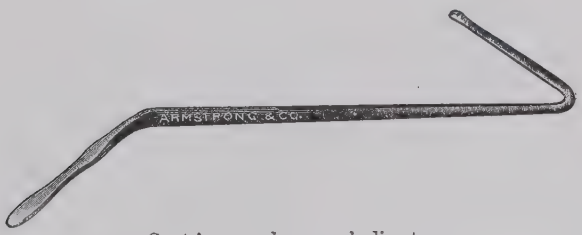
Grooved director.

senting, and with gentle pressure allowed to seek its way as far as it will go. It will often be noticed that these tracts are tortuous and not straight. This should not confuse the operator, but after the director has gone as far as it will, with gentle pressure, the forefinger of the right hand should be anointed with pure vaseline, drawn from tubes, and inserted

into the rectum. The end of the director will likely be felt encroaching upon the mucous membrane. It is very well to manipulate it and see if it can not be made to find the internal opening if the finger has failed to do so. I have seen surgeons confused by the fact that it could not be detected,

Gowlland's director.

and consequently the director would not go into the bowel. This confusion, however, is unnecessary, because in the event of its refusal to pass through, sufficient force should be used on the director to push through the mucous membrane. Then it is caught by the forefinger, and, while being pushed by the left hand, is guided by the finger out at the anus. It can be now held in position, a sharp bistoury is placed in the groove of the director on the outside, and all the tissues remaining upon it divided. The irrigator, containing a solution of 1-to-5,000 bichloride of mercury, being ready, a stream is now to be played over the wound, and a sponge is used to wipe away the blood. A probe should then be taken and run along the route of the cut, and it will, very likely, run into an additional sinus from the main tract. It should then



Gants's curved grooved director.

be withdrawn, and a grooved director, of a smaller size than the one just used, should be inserted, when with the knife it is also laid open; nor should we be content after finding this additional sinus, for a further search may reveal several more, and with their detection they should be laid

open. Another point that requires some attention is the investigation of the beginning of the original sinus on the outside. It will frequently be observed that, for a line or two at least, the skin is undermined. The knife should be drawn across it. One of the most important steps in the operation is the trimming of the edges. If we neglect this, a bad result will frequently be met. I am in the habit of trimming the edges of the wound even if there are no flaps. It is well recognized that these wounds are to heal by granulation, and this trimming aids it. The irregularity of the tissues, whether flaps or not, should be trimmed away. It will be often observed that a portion of the tissue is callous and our division of the sinuses has left ridges in it. This should be caught up with the pronged forceps and cut out with a pair of curved scissors. I frequently excise the whole bottom of the wound in this manner, and I am sure that it has aided much in the healing process. Some recommend the scraping out of these sinuses after the cut has been made. I have never been satisfied with that method of dealing with them. It will be found much better to treat them in the manner that I have suggested.

The description of the operation that has been given deals with the external or complete variety of fistula. The operation for an internal sinus, running toward the surface and having no external opening, is a more difficult thing to do. The difficulty lies in finding the internal opening and introducing a director into it. One would think, from reading the descriptions in the books, that it was quite an easy matter to detect this opening. But the surgeon who has operated often understands that it is a very difficult thing to do. If an ocular inspection is made by means of a speculum, the mucous membrane is so put upon the stretch that it obliterates the internal opening, and if we use the finger as a guide there is nothing positive evidenced to the feel. Sometimes a lump on the outside can be seen and felt, which would indicate that it was the terminus of the internal fistula. If this is the case, an incision into it will reveal the fact, but in the majority of

Plate IV.

OPERATION FOR FISTULA IN ANO BY THE KNIFE.

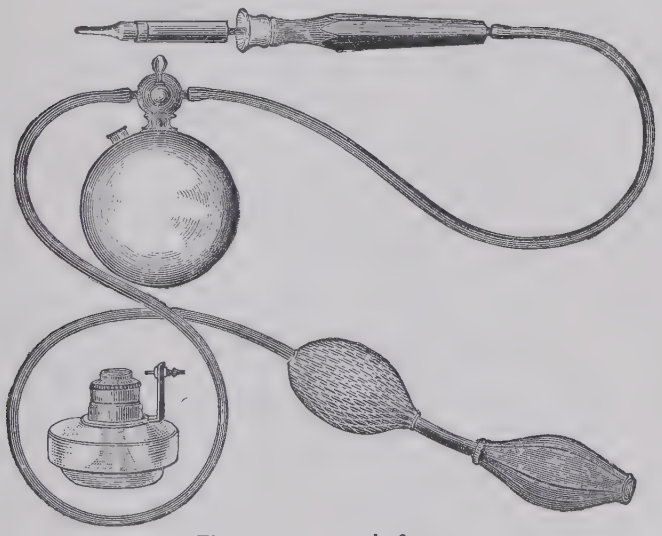
cases this is not shown. Indeed, I am of the opinion that fistulæ of the internal variety usually run around or up the mucous membrane, and do not often extend out into the tissues unless the sinus or cavity is the result of a special diathesis—as, for instance, tubercular. In this case the aperture is usually very large, and by inserting the finger into the rectum it will dip very readily into the opening. The operation consists in bending a flexible grooved director in the shape of a hook, and introducing it into the rectum upon the finger as a guide, and the two together to seek out the opening. When it is pushed into it and approaches the surface, the knife can be inserted over the point of the director and the fistula made complete. Then the operation is finished in the manner already described. A most serious condition of affairs is found in another form of internal fistula—viz., one which begins on the inside of the sphincter and runs around or up the mucous membrane. These cases go a long time without detection. The discharge from them is usually carried away with the fæces and escapes the notice of the patient, and it is only by the reflex symptoms that our attention is first drawn to it, such as an irritation of the bladder, the prostate, pain in the back and down the thighs, which can not be accounted for from an examination of the other parts. Then an examination should be made of the rectum. In this instance the patient should not be instructed to take an enema before the examination, for, by so doing, the pus is washed away, but, having him on the table, an examination should be made in this manner: First, without the use of any oil or ointment, the anus should be gently opened with the two thumbs, and by a little manipulation a drop or two of pus will be seen. I wish to reiterate here that whenever pus is noticed escaping from the rectum, it indicates some serious trouble, generally an internal fistula or an ulceration. After this examination of the anus the finger should be anointed and inserted into the rectum and a search made for the opening of the fistula. We can be easily misled, however, in this examination. We are told that a little elevated spot, or perhaps a

depression, with elevated edges, is what we will find indicative of the opening. This may or may not be the case. We often find these little rough places in the mucous membrane of the lower rectum. A better plan is to distend the sphincters with a speculum, and, by putting in the electric light, a perfect view can be had of the gut for several inches. We may then see a spot which has the appearance either of a little ulcer or an opening. By taking a long probe it can be then placed on this spot, and if a sinus exists it will enter it and likely will take a direction up the mucous membrane. A plan that I frequently practice is to insert the speculum, and, even if nothing pathological is discovered, to wait for a while, and we will see the bubbling up of a drop or two of pus.

Case.—A lady came to me complaining with the many reflexes that I have mentioned; also stated that she had localized pain in the rectum. She had been through the hands of a gynæcologist and also a general physician; had taken much medicine, but was not relieved or even benefited, and her symptoms at this time were progressing rather than diminishing. I made an examination in the manner that I have suggested, first of the anus, but could detect no pus; second, with my finger, but could find no internal fistulous opening. I then examined her carefully, with the assistance of another doctor, and although a good light was thrown into the rectum, nothing could be seen to account for her trouble; but I suggested that we keep the speculum *in situ* for a few minutes and watch for results. After a little while the doctor said, "There it is," and, in looking at the spot, we saw several drops of pus oozing out. The probe was then introduced and a sinus found, extending up the mucous membrane at least an inch and a half. A grooved director was inserted through it, and it was laid open with the knife. I was not content with this, but trimmed off the edges of the cut mucous membrane. It was a long time before all of her reflex symptoms disappeared, but they eventually did so.

I have suggested that the operation for internal fistulæ of

this kind is a very difficult and sometimes a very serious one. All operators in this line recognize that cutting the mucous membrane to any extent in the rectum results sometimes in profuse hæmorrhage. I have described in another part of the book the manner in which Mr. Gowlland, of St. Mark's, deals with this kind of fistulæ. Allingham, Sr., has devised a pair of spring scissors with probe points to be used through a special grooved director. The scissors can only be removed from the groove by drawing them out toward the handle of the director. This prevents the scissors from slipping out. He says: "With this instrument you can divide fistulæ high up the bowel, however dense they may be, with great facility and quickness." It has been my experience that this form of fistula is not often dense, and there is no difficulty experienced in cutting through it, the chief difficulty being the controlling of the hæmorrhage.



Thermo-cautery ready for use.

Mr. Luke, in 1845, recommended cutting through the diseased structures in these cases, especially when complicated with stricture, by means of a fine piece of strong twine and a screw tourniquet. Of course, his idea was here to avoid the hæmorrhage that I have spoken of as attending

such operations. Allingham substitutes the elastic ligature. I am not in the habit of using either plan in these cases. In the first place, if a stricture is complicated by fistulæ, the latter are the result of the stricture, and we will generally find that there are a number of sinuses. It would be a rare case indeed if only one existed. It would accomplish no good, therefore, to lay open the tract of the fistula, but in such a case the stricture, being the primary cause, should be operated on first; but my experience has been in dealing with cases of stricture complicated with fistula, beginning above the strictured surface, that an operation for fistula did more harm than good. My plan in dealing with internal fistulæ running up the gut is to divide the channels by means of a grooved director and a knife, and either touching the bleeding points with a hot iron of the thermo-cautery, or plugging the rectum, after the manner already described. With all the ingenuity at our command, we will often find it a difficult thing to cure this form of fistula, especially if it is at all complicated—as, for instance, a tract or tracts running around the bowel, under the mucous membrane, and up the bowel.

Case.—A lady was sent me from an adjoining State with the following symptoms: She had been a subject for more than a year of intense pain at a point parallel with the spine and about two inches from it in the left lumbar region. Along with this, she complained of a burning heat or pain inside the rectum. The bladder sympathized to such an extent that she suffered from painful micturition and a frequent desire to urinate. This woman was in a condition of nervous exhaustion, although physically she appeared to be a healthy woman. She fought against her trouble, but her mind was greatly disturbed by it. So prominent was this symptom that her husband said to me that frequently she had a confusion of ideas, together with a disturbed memory. Whether she thought herself in an incurable condition, or whether it was in some other manner that her mind was disturbed, she was, to say the least of it, a confirmed invalid. Upon the first examination I could not detect a sufficient amount of trouble

in the rectum to account for her symptoms, and yet she referred all her trouble to that part. Upon the second examination I found, just over the sphincter muscle, a small sinus, which I divided. I kept her under observation for several weeks, and her general health improved, but she still complained of this sensitive condition of the lower rectum. A few days prior to the time that she had appointed to return home I made an examination with the nurse, and found a little external opening just at the verge of the anus. Putting my probe into it, it ran up and entered the lower border of the sinus that I had divided. For obvious reasons I did not desire to put her under chloroform to divide this, so I inserted a small director through it and laid it open. This gave her great pain and greatly disturbed her, and I regretted afterward that I had inflicted it upon her. She then remained at the infirmary for a while until this little wound had entirely healed. She returned home, but her letters to me indicated that she was not relieved. Although, in a general way, somewhat better, the local condition had not improved. She returned to this city in about as bad a condition as she went away. I confess that I was nonplussed. I determined to give her another rigid examination, but suggested to her that when I did so I would also operate at the same time for any trouble that I might find, thereby saving the necessity of taking the anæsthetic twice. She was a brave woman and willing to submit to anything that I said. She was prepared for the operation and put under the influence of chloroform and a search of the rectum made. I used a stout director instead of a probe for the exploration, and, to my surprise, it fell into a sinus which ran down into the tissues at least an inch, beginning dorsally with a little inclination to the right side, and then taking a course through the tissues toward the perinæum, coming up in front to the mucous membrane. I pushed the director through the membrane, and with a stout knife divided the tissues on it. The cut caused a profuse hæmorrhage. I had the wound irrigated with very hot water, and then the bichloride solution (1 to 5,000), and packed the

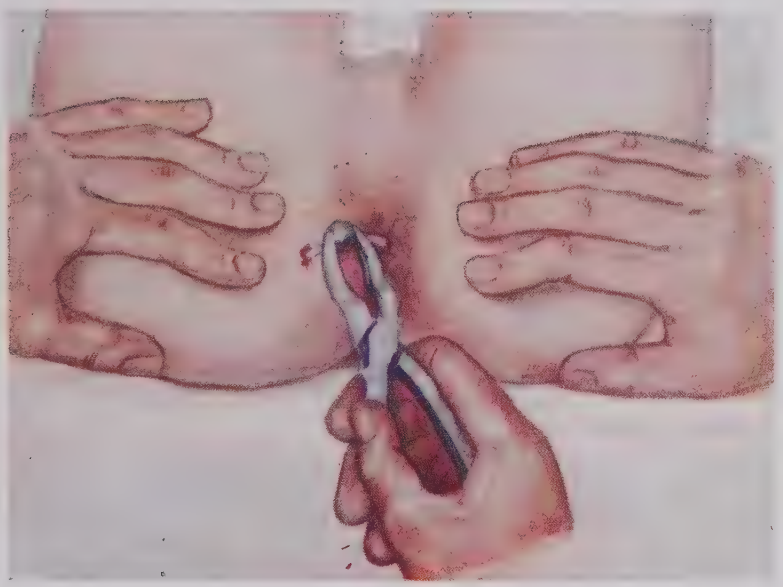
wound with iodoform gauze, and then plugged the rectum after the manner that I have described in a former chapter. On the fifth day I removed the plug and the dressing, and no hæmorrhage followed. For weeks the rectum was irrigated daily with the different antiseptic solutions. Pus was kept from flowing, but the wound was a long while in filling up, and for two months after the operation an immense deal of mucus would follow each irrigation. She improved continually after the operation, both in a local and general way, and was, at the last time I saw her, able to walk many squares, had a good appetite, and suffered comparatively little pain. The pain in the lumbar region, however, would appear at intervals, but was not very severe.

This case illustrates that unless a surgeon is very careful in his investigations of the rectum, a sinus or sinuses may escape his observation. From the very nature of things, the wounds on the inside of the gut will be a long time in healing. The fæces irritate it daily, and the sphincter muscle prevents a rapid cure. It also illustrates what delicate surgery has to be practiced in this variety of fistula. Frequent examinations, after these operations, should be made, in order to see that an ulcer does not result. It can not be too strongly impressed upon the operator that the greatest care should be taken in doing any cutting operation around the rectum upon women. The anatomical relation of the sphincter muscle is entirely different from that of the male, and incontinence of fæces will frequently result in them from these operations. Even a thorough dilatation of the sphincter muscle for the purpose of curing a fissure or irritable ulcer might result in this condition, and, to them, the result is of a much more serious nature than the disease for which the operation is done.

Treatment of Fistula by Ligature.—Very great prominence is given by some authors to the elastic ligature as the means of cure for fistula. I must confess that the more I use it the less I am pleased with it. I never have employed it but that I thought that I was temporizing instead of radically

curing the patient. No surgeon wishes to do his work the second time, and this is sure to be the case if the elastic ligature is used indiscriminately. It can be very properly called Dittel's operation. Whereas he was not the discoverer of it, he has been the strongest advocate for its use. Mr. Allingham has employed it in more than one hundred and eighty varied cases, and says: "I can truly say I have over and over again been very glad that the utility of the elastic ligature had been brought forward by Prof. Dittel after it had quite fallen into oblivion." As I have said concerning some other operations, in the hands of an expert rectal surgeon and diagnostician it might be employed with some success; but to say to the general profession, or to the student, that this is a good operation for fistula in ano, would be the means of conveying a wrong impression, and one that was likely to do much harm. After operating for this class of disease for many years, I must confess my inability, in the majority of cases of fistula, to tell whether there is any more than one sinus existing or not. Now, the advocates of the ligature must admit the fact that, until a cut is made, no surgeon can tell the number of sinuses or their extent. They must also admit that the external opening is no guide to the amount of trouble that he may meet in the operation. In fleshy persons, branch sinuses of fistulæ often do not begin at or near the surface, but radiate down through the tissues, and no evidence of a pipe-stem feeling is given to the finger. If these assertions can be verified, then it must be admitted that in all such cases the ligature would fail to cure. The laying open of a main sinus by the knife, ligature, or what not, will not eradicate additional branch sinuses. Again, there is a toughened and indurated condition of the walls of the fistulous tract. The ligature, of course, cuts only through the top of this, leaving the bottom untouched. I have only to revert to Mr. Salmon's teachings, "that if the bottom of a long-standing fistula is not divided, it will be impossible to establish the healing process." He was therefore in the habit of drawing his knife through the bottom of the sinus, and it

is known to-day as Salmon's back cut. I say, therefore, with all deference to the distinguished surgeons that have advocated its use, that I do not believe it comparable with the knife under any circumstances. Even granting that there is but one sinus, the knife will accomplish in a few seconds what it will take weeks for the ligature to do. There are four conditions, either one of which, if existing, should prevent the use of the ligature: 1. Where more than one sinus is known to exist. 2. When the fistula is of long standing and the walls of the sinus are indurated. 3. When the general appearance of the parts indicates a flabby condition of the skin or tissues which would cause the edges of the wound to be a source of irritation. 4. In cases of horseshoe fistula. Believing that this statement is true, there are therefore but few cases of fistula left in which the ligature would prove of service. Indeed, the only condition that I call to mind would be a fistula of recent date, superficial in character and of but one sinus. Even then I should be tempted to throw some muriate of cocaine along the route of the sinus and slit it open. When the ligature has cut its way through, after several weeks' time, it has accomplished the identical thing that the knife does at last—that is, a division of the tissues. So it occurs to me that it is simply deferring to the whims and prejudice of the patient against the use of the knife, not to consider the other arguments that I have used. Again, in these days of antiseptic surgery, no surgeon desires to see pus escaping from wounds. It would be impossible to prevent this if the ligature is used in dividing a fistula. If, after the ligature has cut through the tissues, it is discovered that there are additional sinuses, the knife must be resorted to at last, for they may run in such directions or be so tortuous that the ligature could not be used for their eradication, and if this procedure had to be gone through with, the patient's reasoning powers will teach him that it would have been better to have used the knife at first. Or, if it is noticed, after the ligature has accomplished its purpose, that the edges of the wound are in a flabby condition, then these flaps must be cut



OPERATION FOR FISTULA IN ANO BY THE ELASTIC LIGATURE.

away to insure the healing process, and to cut them away would be as severe as the knife would have been in the beginning. Or, if the operation has been done on an old-standing case of fistula, it will be observed, after the ligature has done its work, that the bottom of the sinus is in an indurated or callous condition, and, admitting that there is only one sinus, Mr. Salmon's back cut must be made through it to insure the granulating process. In horseshoe fistula no one would advocate its use.

Advantages of the Ligature.—Allingham says: "What are the advantages of the ligature? Briefly these: That in simple cases there is little or no pain inflicted by the operation; the patient can walk about without danger. I have had many cases proving that nervous persons will often submit to the ligature when they will not to the knife. There is no bleeding—a manifest advantage in persons whose tissues bleed copiously on incision. I have found it useful in several such cases. In phthisical cases it is, in my opinion, the best means of dividing a sinus. In very deep, bad fistulæ the elastic ligature is most valuable as an auxiliary to the knife. I now most frequently use it in this way—avoiding hæmorrhage in sinuses running high up the bowel, where large vessels are inevitably met with."

I will answer these statements briefly as follows:

1. "That in simple cases there is little or no pain inflicted by the operation." I have used the elastic ligature in quite a number of cases of fistula in ano, and I must say that I have yet to see the first patient that did not say that it was painful. A ligature that is applied tightly enough to cut through tissue must be painful. Certainly the pain and distress are sufficient to prevent the ordinary application to business, and in each one of my cases the patients assumed a stooping instead of the erect position, and walked with some difficulty. Indeed, such was their condition that they did not desire to move about at all.

2. "The patient can walk about without danger." I once heard Prof. Richard O. Cowling, deceased, testify be-

fore a jury that no wound was so insignificant that it did not call for absolute rest. The expression was one of much meaning and made a great impression upon me at the time, which I have never forgotten. To say that a patient can walk about *without danger* one can hardly be certain, and to say that he is *able* to walk about should be no argument in favor of the operation. The wound would be constantly irritated by any such exercise, and the flow of pus insured. I can scarcely consider it good surgery to allow a patient to walk about with a wound that has to heal by granulation, especially when located in the region of the rectum. Surgeons to-day consider it of absolute necessity to dress wounds under aseptic and antiseptic precautions every day, and one objection to the use of the elastic ligature at all is that while they are making the wound, the cut surfaces can not be dressed at all, and if we add to this that the patient is allowed to walk about and attend to his professional or other duties, surely this condition of affairs is increased.

3. "I have had many cases proving that nervous persons will often submit to the ligature when they will not to the knife." A distinguished specialist in the treatment of syphilis at Hot Springs, Ark., was in the habit of questioning his patients as to their habits, such as the use of stimulants, tobacco, etc., and if he learned that they indulged in such, he would say to them positively that they must leave it off. If they answered that they would not or could not, he would say to them: "Then you go to some other doctor for treatment." I think that a good rule for a surgeon to adopt would be, if a patient said that he would not submit to the knife for an operation for fistula, when the surgeon was satisfied that the knife could be used and was the best, to tell him that he had better get another surgeon. Surgeons often bring themselves into disrepute by succumbing to the dictation of patients, and I can see no better illustration of this than to use the ligature simply because a nervous person would not submit to the use of the knife for the treatment of a case of fistula in ano.

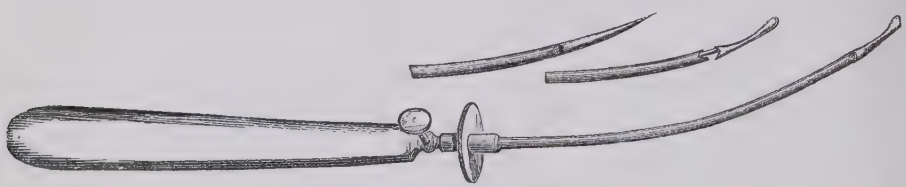
4. "There is no bleeding—a manifest advantage in dealing with patients whose tissues bleed copiously on incision." In witnessing a number of operations done by my friend, Dr. John A. Wyeth, of New York, who has the reputation of doing "bloodless" operations, I was impressed with the idea that hæmorrhage is so easily controlled by the *au fait* surgeon that it is to be no longer dreaded. Therefore, in these operations about the rectum, "tissues which bleed copiously on incision" can be easily controlled by the surgeon.

5. "In phthisical cases it is, in my opinion, the best means of dividing a sinus." To my mind, of all cases requiring the use of the knife for the eradication of fistulæ, those occurring in the tubercular subject are the most important. In these subjects there is no well-defined sinus, but a degeneration of tissue, causing a cavity. When the cut is made, much flabby skin is found, and the skin itself, if not the tissues, is undermined. Add to this that different pockets are often found, which require scraping or trimming, and the ligature is certainly the worst of all methods for treating such cases. We all know, too, how indolent these wounds are, consequently how slow to heal. They require our constant attention, which should be begun from the very moment that the operation is performed. If the ligature is used, we are compelled to wait until it has cut through before any attention can be given to the wound proper. I would also suggest that the effect upon the mind of a phthisical patient wearing a ligature is anything but pleasant.

6. "In very deep, bad fistulæ, the ligature is the most valuable as an auxiliary to the knife." To this I would prefer the same objection as that given in No. 4. In operating for deep fistula I have never yet seen a condition that I would not prefer to use my knife throughout the whole operation. If blood-vessels were divided that could not be tied, pressure has invariably stopped the hæmorrhage.

7. "I now most frequently use it in this way—avoiding hæmorrhage in sinuses running high up the bowel, where large vessels are inevitably met with."

I have never been partial to the *elastic* ligature in dividing fistulæ that run up the bowel. For such purpose I much prefer the silk ligature, used after the manner of Mr. Gowlland, or in the ordinary way. It does its work much quicker and with much less inconvenience. So it will be seen that I dissent from each and all of the so-called advantages of the elastic ligature over the knife, and I submit to the profession whether my objections are valid or not. I have sometimes thought that the silk ligature, used after the manner of the old physicians, had some advantages over the elastic ligature. One is that it can be more easily applied; another, that it can be only moderately tightened. The only disadvantage it has contrasted with the elastic ligature is that it takes much longer to accomplish its work, and yet these patients, who have such horror of the knife, can easily afford to take a longer time if they are freed from pain and allowed to prosecute their business. The manner of applying the elastic ligature is very simple. Numerous devices have been suggested for placing the ligature through the fistulous tract, but I am persuaded that the easiest and best is to thread a very stout probe with the ligature, and insert it through the sinus, pulling the distal



Allingham's ligature carrier.

end out of the anus and placing a bullet, through the center of which a round hole has been made, over the two ends, and pushing it up with a pair of tooth or other forceps, close against the tissues; then, pulling firmly on the two ends of the ligature, the bullet is clasped tightly. This rubber cord should be of sufficient strength to bear a good deal of weight, and should be drawn so taut as to cut through without any further retightening. But if it is noticed, after a sufficient length of time, that the ligature is loosened and hanging

in the wound, then, by taking another bullet and cutting through its side, it is placed over the ligature, and, drawing it tightly again, the bullet is clinched. It will then cut through the remaining tissue. Allingham, Sr., has devised an instrument for drawing the elastic ligature through a fistula from within outward that in the hands of an experienced surgeon answers an admirable purpose.

Treatment of Horseshoe Fistula.—This is the most serious form of fistula in ano with which the surgeon meets. I have never liked the term horseshoe fistula; a better one would be complex fistula, because it gives a better idea of its pathology.

In this form of fistula the idea that is meant to be conveyed is that it encircles nearly completely the rectum. There may be only one external opening, but generally two internal openings. It will be seen at once that the objective point here is the sphincter muscle. The rule that should be always carefully observed is, not to cut through the external sphincter muscle twice at one sitting.

Case.—A young man was brought to me, by his family physician, who gave the history of having had a large rectal abscess about a year before. It had left him with a fistula, the external opening being in the perinæum. He complained of the frequent formation of what were pus cavities in each buttock, which would break and discharge through this opening, and then, for an interim of perhaps several weeks, he would feel comparatively easy. Lately one of these cavities had broken through the rectum, discharging a good deal of pus. His general health had been impaired from the constant drain. I examined him as carefully as I could without an anæsthetic, and determined that there was a great undermining of tissue in both buttocks, and, extending across the coccyx, was a distinct feeling of a whipcord, which evidenced the connection between the two sides. I expressed to his physician the opinion that it would be a serious operation; that the wound would be a long time in healing, and that perhaps the sphincter muscles would be impaired by the operation. We agreed to do the operation after a couple of weeks prepa-

ration, which consisted in building the boy up as well as we could by tonics, stimulants, and nutritious food. At the end of that time the operation was done as follows: The patient was put under ether and a long grooved director introduced into the external opening in the perinæum. It rapidly followed the large sinus which ran around on the left side and was forced to a point over the coccyx. A free division of the tissues was then made. We could then look down into this large, ugly wound, and, by placing my finger at its bottom, several smaller cavities were detected and the knife drawn through their bridges. I scraped it thoroughly of its *débris*, and had the wound irrigated with the bichloride solution. By the use of a probe a sinus was detected nearly midway of the cut, which ran into the bowel in a course toward the coccyx, but which included the sphincter muscle. I divided this sinus, and then proceeded to trim off the overlapping edges of skin all along the route. The whole wound was packed with surgeon's cotton, which had been dusted with boric acid. I refrained from operating upon the other side, although my examination showed that it was equally affected, because of the damage that would be done the sphincter muscle, not only by its division, but by cutting away so much tissue around it, leaving it without support. This wound was carefully watched, the general health of the patient looked after, and in six weeks after granulation had been established nearly to cicatrization, I operated on the other side, doing an operation very similar to the first. It was four or five months before this patient could be discharged as cured, for during the time he was under treatment there was pocketing several times.

After-treatment for Fistula.—It requires as much knowledge and care to carry the wound inflicted for a rectal fistula on to a perfect result as to do the operation. I am satisfied that just as many cases that result in a failure to cure are due to the want of a proper treatment after the operation as to the manner of doing the operation. Therefore I would advise the surgeon to keep these patients under his own observation and treatment

until a cure is effected. One of the greatest dangers to be apprehended is the confinement of pus, and another abscess or pocketing of the tissues. If these are not dealt with just at the time of their occurrence, the fistula is very sure not to heal, and yet a little care on the part of the surgeon will prevent this. The two places that should be watched especially are the beginning and the end of the wound. This is especially true if the external opening is located either in the perinæum or dorsally over the coccyx. A pocket is very apt to form just under the skin at these two places, and if a knife is drawn through them soon enough they cause but very little trouble. It must be remembered that these wounds must heal by granulation from the bottom. Time was when surgeons thought that pus was necessary to the healing of the wound; but now, if we witness it in or on wounds, we know that something is radically wrong. Of all portions of the body, around the rectum is the most difficult to prevent wounds suppurating; therefore, if we have a deep wound to deal with, it requires the most careful watching and treatment to prevent the pouring out of pus and its being held in the bottom of the wound, sometimes confined in a pocket. Each time that it is dressed, it should be seen that the sides of it do not lie in apposition. We will often think that we have the wound distended when we open the top of it and look down into it; but if we will take a small instrument and insert at the bottom, we will find that the granulations have simply united from the sides. These should be broken up at once. My friend Dr. Leon Straus presented me with a little instrument that he brought with him from St. Mark's, devised, I think, by Mr. Herbert Allingham. It is a metal rod, eight or ten inches long, which he uses in pulling through the bottom of these wounds. It is quite a neat instrument and answers the purpose admirably. As a substitute, if one has not such an instrument, I would suggest the wrapping of an ordinary pen-holder with a thin layer of cotton and using it for the same purpose. The idea is that the bottom of the wound must be inspected every day to see that the granula-

tions come up and no union takes place from the sides. It is a matter of some concern how to dress these wounds each day. For the first week my habit is to irrigate them with the bichloride-of-mercury solution (1 to 5,000). This, I am sure, is the best agent to prevent suppuration and does not interfere with the granulation. If the fistula has been a very complex one and many sinuses were divided, leaving a ragged wound, the very best dressing for a few days, at least, is Marchand's peroxide of hydrogen. This is a wonderful cleansing agent and has strong antiseptic properties. After the irrigation with the bichloride solution, I either dust the wound with powdered iodoform or lay a strip of iodoform gauze gently in the wound, pushing it down to the bottom with a pair of forceps. After the first dressing, the wound should never be stuffed or packed with anything, but simply a thin layer of the gauze placed between the sides. I then put a large piece of absorbent cotton over the wound and apply a T-bandage. The first dressing is usually removed on the second day. I believe that this is better than to allow it to remain three or four days, from the fact that a good deal of blood has oozed into the dressing, dried there, and acts as an irritant. The subsequent dressings are as I have detailed, with the exception that I frequently substitute, in the second week, a carbolized hot-water irrigation, or I make a solution of one part of campho-phenique with ten parts of hot water and wash the wound with it. Campho-phenique is a combination of refined camphor and pure chlorophenic acid. It prevents suppuration in fresh wounds and controls it in wounds at all stages. It has a local anæsthetic property which obtunds pain, and in this respect is preferable to the bichloride solution. I have carried a great number of large wounds to a perfect healing by the aid of these agents, which I again beg to repeat: Solution of bichloride of mercury (1 to 5,000), carbolic acid, campho-phenique, and iodoform. I have stated in a subsequent chapter that I did not believe that there was anything in the way of a surgical dressing that can equal the powdered iodoform. In these wounds made in operat-

ing for fistula in ano it can not be dispensed with. It has but one objection, and that is its odor; but patients have to learn to submit to it, just as they have to accept many things that they do not like.

Proper care should also be given these patients for the maintenance of as good physical condition as possible during the treatment. It is not necessary to confine any case of the kind to bed for any great length of time. But this advice applies especially to operations upon phthisical patients. They should be allowed to exercise around the room or in warm halls. The debilitated patient should be properly fed, given stimulants when the physician thinks it is best, and tonics, constructives, etc., when demanded. A gentle laxative should be kept up during the entire treatment. I wish to reiterate that it requires as much knowledge and care to carry these patients through to a perfect result as any operation that is done in surgery.

CHAPTER X.

THE NERVOUS OR HYSTERICAL RECTUM.

It has been said by some one that when the physician is confounded and can not make a diagnosis, he calls the affection either hysteria or neuralgia. The general practitioner is often worried with his so-called hysterical cases. Since closer attention has been paid to nerve diseases, a clearer elucidation of their nature has been brought about. I have never been much of a believer in the term hysteria. From my observation of such cases, witnessing the symptoms, etc., I have always thought there was some cause for complaint outside of mental impressions. The gynæcologist has found this out, and is to-day dealing with pathological conditions in the abdominal cavity which have been the main source of producing such disorders. Hysteria and melancholia go hand in hand, and by a reference to statistics we see that these patients frequently drift into insanity. The point should be made out whether the cause be in the mind or in the body, and, having determined this, we are to go to work to locate the seat. Many a woman has been restored to health and to her family, that had been an invalid with this so-called hysteria, by having a diseased ovary removed, or adhesions broken up in the abdominal cavity. It has become rather a fashionable thing to say that one suffers from nervous exhaustion, and even physicians fall into error by classifying it among the simpler affections, when in truth it is one of the most serious diseases to which the human body is subject. To-day one of the most prominent subjects under discussion by the medical profession is nerve reflex, and I shall have occasion further on to deal with the subject *in extenso*. Not

only the general practitioner, but also all specialists, meet with hysteria or hysterical symptoms in some way or another, and the rectal surgeon is not exempt from this. In the past I have seen a great many obscure rectal affections resembling hysteria in their symptoms, and I do not know of any class of patients that suffer so horribly as these. I censure myself, even at this day, in my neglect of these people. In the past I took it for granted that they did not suffer as much as they intimated, and after a partial examination I frequently gave them a placebo only. These people invariably drifted into other hands, oftentimes into those of the quack, and perhaps would go through life without receiving any permanent benefit. I have headed this chapter The Nervous or Hysterical Rectum, in deference to the title used by Goodell, who read a paper before the American Medical Association (Obstetrical and Gynæcological Section) in May, 1888. The title used by Dr. Goodell was The Nervous Rectum, but the term most used in the article was "hysteria, or hysterical rectum." I believed then, and believe now, that the former caption was the more correct. In explanation of the position that he took he said: "The mind is sane, the organic body is sound, the individual as a whole is above reproach, and yet these muscles will behave as if they were bereft of reason." Again he says: "The muscles most liable to become hysterical are perhaps the circular ones, namely, the sphincters of outlets or inlets; and while insanity, so to speak, is more localized, the sufferings are perhaps greater."

The term employed here, "hysterical rectum," is, in my opinion, misleading; and while the importance of these cases can not be overestimated, I am sure that the matter would be better understood if he had written of "some obscure affections of the rectum," for the reason that it invites investigation. Any surgeon who has had much to do in the way of examining the rectum has met with cases where the patient complained much when but little if any disease was found. Now, I will be permitted to say that I think the reason is that we frequently dismiss these patients without a thorough

examination. When one comes to us complaining of a disturbance in the rectum, we naturally expect to find some of the ordinary diseases, such as hæmorrhoids, fistula, ulceration, or perhaps cancer; but it requires a little longer time and a good deal more trouble to have the rectum washed out, the patient put in a proper position, and a search made for some small lesion, which, under the circumstances, is very apt to exist and to be the cause of all the symptoms that the patient may complain of. But if we come to the conclusion, without this examination, that this patient is hysterical, we are too apt to put her upon a nervine, or perhaps a tonic, and dismiss her. The result is that we never see her again as a patient. Webber defines hysteria to be "a diseased state of the nervous system evidenced by an almost innumerable variety of symptoms."

Recognizing to-day the power and manner of the reflexes, we had better say that we can have a diseased condition, *simulating* hysteria, caused by disease or an irritability of the periphery of a nerve. It is too common to class these patients as suffering from a functional nervous disease, when in reality it may be from a pathological condition at the terminal end, and not central, attended with nervous symptoms. Goodell further says, in speaking of the hysterical rectum: "In this form of hysteria there is usually present, in my experience, some one of the Protean symptoms of general nerve prostration, such as spine-aches, backaches, sore ovaries, weariness, wakefulness, and nervousness; but the chief suffering of the most exacting symptom is referred to some portion of the rectal tract, leading the physician to suppose that he is dealing with some coarse or traumatic lesion. The act of defecation then gives great suffering, followed by a painful throbbing, which may last for hours. Patients thus afflicted so dread the suffering that they school themselves into habits of costiveness, and often become victims of opium-eating."

This is a perfect description of this class of patients, many of whom would prefer death to such a life, and we would not be stating the case too strongly were we to say that this con-

dition will often end in actual insanity. In my experience as a specialist, I have had two cases to be confined in an insane asylum from just such a cause. But is Goodell correct when he says that such a case "may lead the physician to suppose that he is dealing with some traumatic lesion"? Would it not be stating it more definitely, correctly, and to the point, to say that in such a case the physician *is* dealing with a traumatic lesion? Can any one doubt, after reading a description like that given above of the hysterical rectum, that he has a diseased condition of the rectum to deal with? Where could you find a better description by any author of an ulcerated rectum than is given here: "Nerve prostration, spine-aches, backaches, sore ovaries, weariness, wakefulness, and nervousness"? Now, in a general way, almost any specialist, especially the gynæcologist, could account for these symptoms by referring the origin to the ovaries, tubes, or uterus. The general practitioner would find many conditions that would produce like symptoms, but in a further perusal of the case we are told that the chief suffering, or the most exacting symptom, is referred to the *rectal* tract. Now, we would naturally look to this tract for an explanation of the trouble. It either must be that there is some disease there, or by a reflex action the symptoms are made manifest in the rectum. Be that as it may, we are dealing with a pathological condition. Either the disease is located in the rectum, and by reflex is making the spine ache, ovaries tender, etc., or the disease is in some other part, and is reflected *to* the rectum by its nerve distribution. But a further study of the case aids us in making the diagnosis. "The act of defecation then gives great suffering, followed by a painful throbbing which may last for hours. Patients thus afflicted so dread the suffering that they school themselves into habits of costiveness." I think rectal surgeons will bear me out in saying that in ninety-nine cases out of a hundred an examination of a patient suffering from these symptoms would reveal a lesion in the form of a fissure, irritable ulcer, ulceration proper, or it may be a peeling off of the epithelium, if not the mucous

membrane. I am certain, then, that in such cases, first, a lesion exists, and that the disease can not be cured until said lesion is eradicated. Secondly, if in these cases a lesion can not be found in the rectum after a long and diligent search, then they must be set down as a reflex condition, and by our knowledge of anatomy we shall either trace it out, or send it to a specialist who can do so. Since I have taken this view of the case I have given my patients a more careful examination, and have usually found a lesion, and by a treatment of the same I have usually cured them ; or if I was satisfied that the symptoms were those caused by reflex from some other diseased part of the body, I have referred them to the specialist to which they belonged. If it is a female, she is usually sent to the gynæcologist. If a male, he is sent to the genito-urinary surgeon. These cases are more common than they are believed to be by the general practitioner, and they merit our closest scrutiny and care.

Case I.—A young girl came to me who had been treated for three years for chronic diarrhœa. The least excitement would cause her bowels to move. She had on an average six to eight evacuations a day. If a stranger came into the room, she had to rush for the water-closet. She could not go into society for this reason. For three years she had taken no nourishment, by order of her physician, except stale bread, milk, and weak tea. She had "Protean" symptoms of nerve prostration, backache, wakefulness, nervousness, etc., together with a burning sensation at defecation, and an aching pain hours afterward. I gave this girl a careful examination, and found a sensitive spot in her rectum. Under chloroform I divulsed the sphincter muscles and touched the spot with nitric acid. She made a rapid recovery. In a few days all looseness of the bowels had disappeared, and she ate a full meal three times a day.

Case II.—Dr. J. G. Carpenter, of Stanford, Ky., thus related to me a case in his own person: "I was the victim once of this spasmodic contraction of the sphincter ani muscles. Often, when riding on horseback and feeling perfectly well, I

would be seized with a sudden pain in the rectum, the sensation passing all over me as if I were struck by lightning, causing me to drop the reins in agony of seemingly impending death. A few weeks would elapse before another attack. On every sudden change of the weather I was affected. Forcible dilatation of the sphincter cured me."

Case III.—William B., aged forty-eight, was sent to me suffering from the following symptoms: At the approach of defecation he felt a severe pain up in the rectum, thought by him to indicate the passage of the fæcal mass over a sore place. During the act a lancinating pain was experienced, and after evacuation a dull, throbbing, aching sensation which lasted for hours. A nervous exhaustion supervened, which completely unfitted the patient for any mental or physical labor. This condition lasted about two years. The symptoms seemed clearly to call for the divulsion of the sphincter. This was done under chloroform, and the patient was promised a cure. Several weeks after, he reported at my office, saying that he experienced no relief whatever, and expressed a desire and hope that he would die, so terrible was his distress. I then carefully examined him again, and could find no lesion whatever. Recognizing the powerful effect of the reflexes in these cases, I advised that he go to a genito-urinary surgeon and be examined for a stricture of the urethra. This he did, and was told that he had both a meatic and deep urethral stricture. These were divided by the surgeon, and the man was relieved of all his distress.

Case IV.—Dr. H., of Indiana, asked me at one of the medical societies to examine him after he had given me the following history: Several years ago, while pursuing his professional duties, he was attacked by a fearful pain in the rectum. It was as if a sharp knife had been thrust through him. It would come up as paroxysms, with a few moments only of intermission. He hastened to procure chloroform, and inhaled it at each approach of the paroxysm until it disappeared. He now carries a bottle of chloroform with him, and regards it as his best friend. Indeed, he says nothing would induce

him to part with it. He would go for weeks perhaps without an attack. Placing him in bed, I examined the rectum carefully with the index finger. I had no instruments with me. I gave it as my opinion that a lesion existed, perhaps only the exposure of a sensitive nerve, and if a free divulsion of the muscle should not effect a cure, the lesion should be sought for and a local application made to it. He afterward consulted Dr. Cook, of Indianapolis, who gave him a careful examination with the speculum, and agreed to the diagnosis I had made. An operation was not done. We met him months afterward, and he reported that he had never had another attack, but he still carried the chloroform.

Case V.—A professional gentleman, sitting in his office with his feet elevated, felt a quick, sharp pain dart through the rectum, near the verge of the anus. These pains came quick and often. He jumped to his feet and called for help. A friend, coming in at the time, caught him as he was in the act of fainting. The attack lasted about twenty minutes and was quieted by opium. I directed that he be taken home, and that suppositories of belladonna and opium be administered for their full effect. The patient had three other attacks in so many days, after which all intimation of rectal disease subsided, but I should add that his rectum had been treated during this time by free washings out with hot water and the use of suppositories.

Case VI.—Dr. W., of the southern part of this State, came to me less than a year ago complaining that at the act of defecation he suffered a tormenting pain, which lasted from one to four hours, and then during the interim, between the acts of defecation, there was a dull, heavy feeling of weight experienced in the rectum, extending to the perinæum. It completely unfitted him for his country practice. An examination revealed a congested condition of the vessels just at the verge of the anus, with one or two sensitive places around the gut. My assistant gave him chloroform, and I freely divulsed the sphincter muscles. He expressed himself as greatly relieved, and on the fifth day returned to his home.

In two or three months thereafter he began writing me that there had been an entire subsidence of his trouble, but that he was satisfied it was coming on him again. The symptoms increased rapidly, and after the expiration of several months he came back to me, suffering as much or more than he had previously. A friend of his said to me: "All of this man's trouble is in his mind"; but the doctor said: "I believe that if you will practice a little cutting, with the free divulsion of the muscle, it will cure me." So the next day Dr. Dugan saw the case with me, when we agreed to administer an anæsthetic and to do as the patient had suggested. I forcibly divulsed the sphincter, feeling it give way in its entirety. Then I inserted a speculum, and held it, while Dr. Dugan thoroughly scarified the gut. In less than three hours after the operation the patient said: "I feel now different from what I did after the other operation, and I am satisfied that I am cured." He went home on the sixth day, and I have heard nothing from him since. This case not only proves what I have said—that a lesion exists—but it also demonstrates that there are many cases in which the divulsion alone will not accomplish a cure. The nerve filaments that were exposed in this man's rectum had their sensibility destroyed by the use of the knife.

Case VII.—A physician living near my office sent his servant after me with the message to come as quick as I could to see him. I did so, and found him in the most agonizing pain. He said that an hour before this, pain had begun in the rectum, seemingly without cause, and that it was unendurable. He had taken opiates freely, and had inhaled chloroform. He expressed the belief that it was caused by spasm of the sphincter muscle. I asked him to allow me to examine him digitally, and he reluctantly consented. I found the muscle spasmodically contracted, and it was with a good deal of difficulty and pain that I succeeded in getting the finger beyond it. This, however, I accomplished, and found just beneath the prostate gland an indurated and denuded spot. After the removal of my finger he said that he

felt that that small amount of dilatation had done him good. I suggested that he allow me to chloroform him and divulse the sphincter. As the majority of physicians would have done, he refused, but suggested that I send him a dilator in the form of a bougie, that he could introduce himself. This I did, substituting an oval speculum with a conical guide, and, by anointing it, he pushed it into the rectum and held it there quite a while. This procedure he kept up for some time, and, together with injections, suppositories, etc., he got over his attack in a few days. Unless that abrasion is cured, he is liable to have another attack at any time.

Cases I, II, IV, and V were evidently traumatic lesions, causing the exposure of a nerve, and Case III was due to a traumatic stricture of the urethra, and the pain in the rectum was entirely reflex. All the rest of the cases were proved to have originated from disease in the rectum, though very difficult to find. Therefore I say if these diseases are relieved by local measures, it proves the affection to be local, or, more properly speaking, pathological, and not hysterical; primary, and not secondary, in its nature. If they had been hysterical, the local treatment would not have given relief, but a constitutional course of treatment would have been necessary. Goodell says in his article: "Sometimes the site of the rectal pain lies higher up than the sphincter muscle, and is irrespective of the act of defecation. It is then liable to be periodical in its character, coming on at regular hours of the day, probably from the periodicity with which the accumulation of fæces in the lower bowel takes place."

According to this statement, I can not believe in the idea of hysteria attacking a muscle, for the reason that the above is not a description of any unique condition found in the rectum, but is a very common one to the rectal surgeon. It is an every-day affair for the patient to say to us that the pain lies *higher* up than the sphincter muscle, and is not connected with the act of defecation. Investigation of these cases has demonstrated to me the fact that it requires a very little lesion to produce such symptoms. The books usually

refer to ulcers, or ulceration proper, as producing them, but in many instances I have found that the simple peeling off of the epithelium at certain spots is sufficient to bring about such a condition of affairs. In other words, I do not think it necessary that the gut should be ulcerated, and I know of no term to express exactly this condition, and yet through the speculum I have often seen it, and have called attention to the fact that it accounts for hæmorrhage sometimes from the rectum. In former years I was in the habit of searching for a well-defined ulcer, and paid very little attention to the condition of which I am now speaking, but by experience I was taught that it was of more importance than I deemed it, and yet I was more or less excusable, for the reason that I had never had my attention called to it by any of the text-books, and the truth of it goes to prove a fact which is pertinent to this question—that it requires a very small amount of change from the normal condition to produce the symptoms of which we have spoken. The very fact, as Goodell says, that the trouble is periodical in its character, coming on at regular hours of the day, probably on account of the periodicity with which the accumulation of fæces in the lower bowel takes place, will incline the rectal surgeon at least to suspect some abnormal condition in the bowel. I think that we can dissipate here all idea of "hysteria" attacking the muscles. The muscle which would likely be affected—the external sphincter—is not in contiguity with the disease proper. Those that have observed these diseases with much precision have found that, when the lesion or abrasion is located in this part of the rectum, the sphincter is not made to respond to nerve irritation, but that we get the symptoms through other organs or by the reflexes. It is only pressure upon or disease of the nerves which supply the sphincter that produces the irritability and the so-called spasmodic action of the muscle itself. For instance, if we have what is called an irritable ulceration encroaching upon the sphincter muscle, we will have the tormenting and agonizing pain of fissure, and yet in my practice

I have known many instances of ulceration to exist in the bowel for a sufficient length of time to produce a strictured condition of it, and yet the patient had complained of but little pain. Indeed, such persons are more apt to come to you to be treated for constipation than for ulceration. I would therefore prefer to consider for the balance of the chapter what we could more properly term

Obscure Diseases of the Rectum.—I believe with Webber that hysteria can be defined as "a disease of the nervous system having no recognized pathological condition." I certainly believe that it is impossible for a muscle to be *attacked* by such disease; but whenever we have evidences such as have been described, they are, in my opinion, the result of disease at the seat of trouble, or by reflex from continuity of structure. Under the latter condition we will find disease as the cause of such symptoms located somewhere. If either one of these propositions be true, then the idea of such diseases being "hysterical" in their nature can not be sustained. The profession has fallen into the habit of accepting the ordinary definition for hysteria, which is that it simply means an assuming of symptoms when no disease exists. A better term for such manifestation in the rectum would be neuralgia, although, in the ordinary sense and application of the word, that is a misunderstood and a misapplied term. There are very many pathological conditions which exist in the rectum, any of which could, and do, present all the symptoms of the so-called hysterical rectum. I can not, therefore, too strongly urge the necessity of a careful examination to detect these changes. For instance, the rectum because of its peculiar office, of its deficiency of valves in the venous supply of blood, of the dependent position, etc., is quite liable to a congested state, if not to an inflammatory one. Of course, the term congestion would signify that there was too much blood in this part, and that its return through the veins was impeded; hence we would have the so-called varicose condition existing here which is termed by some authors *hæmorrhoidal.* Although I do not believe that a dilated vein or

a varicose vein, if you please, constitutes a hæmorrhoid, yet I am satisfied that this is the incipient state which will lead to the hæmorrhoidal condition, if not overcome. But, as I have mentioned, you may have this congested condition, attended with some inflammation; and just as you could have varicose veins in the lower limbs, followed by ulceration, so you can have it here. Authors are in the habit of dealing with this state of ulceration as a consequence of the existence of hæmorrhoids. This is a very different state of affairs from the one of which I am speaking. In hæmorrhoids we can only have ulceration as a condition resulting from friction, brought about by frequent protrusion, etc., and I would mention that it takes a long time to produce such a condition; but where the blood-vessels are strutting from an overdistention of blood, it is very easy to understand that by the pressure of hardened fæces as an irritant or of a displaced womb as an obstruction to the return of the flow, we could have a lesion in the vein wall which would terminate in an ulceration. Therefore I am inclined to the belief that although the theory usually given for the production of the hæmorrhoidal condition is correct, I am satisfied that that which is initial of the hæmorrhoids—namely, the congested blood-vessels—is also initial of the *ulceration*, etc., that is found in the rectum. As a cause of obscure disease of the rectum I might mention foreign bodies which frequently lodge in the pouch and produce distress, if not trauma.

Case.—Several years ago a lady patient was sent me from Bowling Green, Ky., for examination. She said to me that she believed she had cancer, and a note from her physician implied that that was his opinion. This woman suffered with really an obscure condition of affairs. She did not have any acute pain, but said that she was always miserable—pain in the back and the thighs, and a general lassitude. She had lost much flesh, was constantly thinking of herself, and remarked that she had no special desire to live. I attributed this more to her belief that she was suffering from malignant trouble than anything else. Placing her on the table, I intro-

duced my finger into the rectum, and immediately above the external sphincter, toward the perinæum, I felt a hard, nodular lump, which could be very well circumscribed. The rest of the gut seemed to be healthy. She gave no history of an abscess or of an acute inflammation of any kind. I told her, after the examination, that I thought an operation was necessary, which meant a free removal of the tumor. The next day she was attacked with pneumonia, and was attended by a physician friend in this city. After her recovery she was in such a debilitated condition that her physician advised her to return to her country home and remain there until she was sufficiently recovered, in a general way, to undergo the operation. I did not hear from her for months, when one day I met a relative of hers in a hotel, who said to me: "Did you hear how that case turned out?" Not having heard from her at all, I said that I was ignorant of anything concerning it. He then told me that a few weeks before, while suffering from a diarrhœa, which was a common thing with her, she had gone to stool, and, in her effort to pass everything from the bowel, strained vigorously, but felt that there was something which would not pass. So she introduced her own finger into the rectum, and, feeling a hard substance there, hooked the finger around it and pulled it out. And what do you suppose it was?" said the man. I had to confess my ignorance. "Why," said he, "it was a large jaw tooth with a perfect gold filling." I asked him if she gave any history of swallowing this tooth, and he replied that she did, saying that eighteen years prior to this, in the extraction of a number of teeth, she remembered to have swallowed one. It had become imbedded in the tissues of the rectum and remained there, and afterward ulcerated through. It is needless to say that all her "obscure" symptoms disappeared.

It is a very easy matter to wound the delicate mucous membrane at the verge of the anus, and if a lesion is once started, however small—even too small for detection—these obscure symptoms will result. In many instances one passage of hardened fæces is quite sufficient to accomplish the result.

The use of rough substances as a detergent, in which list I might include common printed paper, will accomplish this. The enema tube is known to be a frequent cause of such trouble, or the openings of internal fistulæ too small for detection may cause all of these obscure symptoms.

In a succeeding chapter, on the anatomy of the rectum in relation to the reflexes, I shall deal more explicitly with such disorders as proctitis, injuries to the uterus, or diseases of it, stricture of the urethra, cystitis, enlarged prostate, etc., which are common causes of these obscure symptoms. Until these abnormal conditions are cured it will be impossible to have the so-called hysterical symptoms disappear. Of one thing I am certain: that in not one single case, be it of a hysterical nature or one with obscure symptoms from whatever cause, have they been benefited by constitutional treatment in my hands. Besides these common diseases of the rectum, or, I may say, these obscure diseases of the rectum, there is another class that can not be described or accounted for by the symptoms or conditions which I have mentioned. Prof. Goodell gives a very excellent description of the condition to which I refer. He says: "There is yet another form of disease which I think may be classified under the general heading of nervous rectum, although its pathology is by no means yet fully understood. I refer to pellicular colitis, or pseudo-membranous enteritis, as it is usually termed, in which mucous casts of the lower bowel are discharged, with much tenesmus and abdominal pain, either by themselves or in the regular evacuation."

In my opinion, these cases are not unique, but quite a number of them are to be seen by the rectal surgeon in the course of a year, and I can not agree that the disease, for disease it is, is a "sheer neurosis." I have seen the affection in patients not given at all to hypochondriasis, and relief has been obtained by remedies outside of those that affect the nervous system; or, in other words, it has been treated as a *local* disease, and not as a nervous disease at all. I believe that in all of these cases a *disease* exists, the result of patho-

logical change, as the names colitis and enteritis imply, namely, by inflammatory action. I have never yet succeeded in curing such a case outside of direct or local medication.

Ætiology.—The rational treatment of all disease necessarily depends upon a correct diagnosis. How difficult this sometimes is, all practitioners of medicine, as well as specialists, are aware; but I believe that specialism has done much toward elucidating the subject of diagnosis. It often occurs that a patient suffering from some obscure malady has passed through the hands of many general practitioners and a few specialists, until at last some one has discovered the seat of disease and effected a cure. I can not believe that the medical profession, as a whole or in part, is so selfish as to detain a patient for treatment who rightfully belongs to another. My experience has been that whenever this point has been determined by either the general practitioner or the specialist, the patient is sent where he rightfully belongs, or is thought to belong. In dealing with this subject of the "nervous rectum," a term which of itself implies a doubt, it has been my object to demonstrate that an argument must be based upon clinical facts before a position is taken, and in regard to these affections I will state again that I believe that they have their local origin in the rectum, and that all nervous manifestations are secondary to it. If this premise be admitted, then the line of treatment is plain. Relieve the cause (local), and the manifestations (general) will disappear. If the premise is wrong, and these troubles are "neurotic"—i. e., caused by a disordered condition of the nervous system—then the term "nervous or hysterical rectum" is the correct one, and the line of treatment would be to correct the general condition, and the local symptoms will take care of themselves. Now, I wish to say that I have seen some few cases where it was impossible for me to make out the pathological change, or to account for the symptoms by any of the reflexes, and that I was nearly forced to the conviction that they were the result of a "sheer neurosis," because sometimes the condition is very remarkable and difficult to explain. But even granting that I was unable to find

the lesion or to locate the reflex, I would not be warranted in taking the position that the trouble was not caused by pathological change somewhere.

Case.—A young lady was advised to come to me from a city in Pennsylvania, quite along distance. While sitting, narrating her case to me, she gave a sudden start and fell across the chair from the effect of a most terrific pain in the rectum. Although I gave her a hypodermic injection of a fourth of a grain of morphine, and another in the course of thirty minutes, it was more than an hour before she became quiet. She then told me that she had had these attacks at intervals of two to three weeks for several years, and that within the last year they occurred nearly daily and sometimes two or three times a day. She was afraid to go out on the street alone because of them, and had given up her gentlemen friends on this account. She was a very prepossessing girl, in good flesh, weighing about one hundred and forty pounds, and showed evidence of a good, generally healthy condition by the rosy color in her cheks, a good appetite, etc. She remarked that if she could be relieved of this local disease she would be perfectly well, but rather than bear it another year she would prefer death. She described these attacks just as I had witnessed this one—namely, as a sharp, quick, lancinating, terrible pain, just within the rectum, lasting from a few minutes to several hours. It had no reference to the act of defecation at all, nor to the condition of the bowel, whether she was suffering from constipation or diarrhœa. The symptoms were somewhat aggravated and the attacks more frequent during the time of her monthly sickness. I examined her rectum diligently and carefully a number of times, but could find no trouble. I had my assistant give her ether, and I forcibly divulsed the sphincter muscle, thinking that this would relieve her, and so told her. While under ether I carefully examined the upper rectum, but still found no disease. This divulsion did her no good. Hearing her complain at one time of some pain at micturition, I had my friend Dr. W. H. Wathen to see her, and he thought it a good idea to divulse

the urethra, which he did. This accomplished no good. As I mentioned, she suffered more at the time of her menses, and Dr. Wathen advised that the cervix be divulsed. This he also did, both of us thinking that possibly we would trace the reflex to this origin. Like the others, this operation was perfectly *nil* in its effects. The attacks went on. I should say that during all this time I was medicating the rectum locally. I applied a solution of nitrate of silver, injected large quantities of very hot water, used other injections, of the fluid hydrastis, hydrate of chloral, pinus canadensis, etc., all of no avail. I invited her upon one occasion to go before the Louisville Surgical Society, which met at my residence, said society being composed of twelve of the leading surgeons of the city. I had each and all of them to question her closely, and they could not advise anything more than had been done for her relief. She remained in my infirmary four months, and concluded at the end of this time to return to her home in Pennsylvania. The evening before her departure I called at the infirmary, found her in great distress in one of her attacks, and asked her if she had taken the hot-water injection that I had ordered. She said she had; that it did her no good. I said: "Suppose you try a cold-water injection," and left her. The next morning I called and found this girl walking through the hall in an erect position; her natural position since she was first attacked was a stooped one. I said to her: "Why, what's the matter?" She replied: "Why, don't you know that I haven't felt the least pain since taking that cold-water injection yesterday evening, and can walk with perfect ease?" This was such glad news that I told her to discard everything else and use the cold-water injections. She left that night for Cincinnati. Two days thereafter she wrote me that she had had no further pain; that she had walked eleven squares that day and had done some shopping. I did not hear from her again for ten days or two weeks, when she wrote me that she had had only one slight intimation of pain and had called in her family physician, who wished to prescribe, or did prescribe, some of her old remedies, which she declined

to use. That was one week before she wrote me. She had not felt it since, and remarked that the night before writing me she had attended a ball, the first one in years, and had danced a number of times without any inconvenience at all. She continued to improve, and eventually ceased to write.

Now, this case I am at a loss to understand. It comes nearer to being one of "a sheer neurosis" than anything that I have ever seen. Could it be that this trouble was neuralgic in character, having its origin probably in the exposure of a small filament of a nerve, and that the cold water so impressed it as to overcome its sensibility, according to the common aphorism in surgery, that if heat does not accomplish the desired purpose cold will?

In tabulating the causes, therefore, of these "obscure affections of the rectum," I would have to restrict them to two heads: 1. The reflexes. 2. A lesion or pathological change at the seat of trouble.

I must confess that of all vague terms used by a physician, this one, *hysteria*, is the vaguest. Having reference, as the derivation of the word implies, to the womb, the profession has been in the habit of characterizing many affections of the female which we could not understand as hysterics; but so many symptoms analogous to these are presented in the male that we frequently see articles descriptive of them and the same term used. I do not deny that the nervous system is responsible for many strange freaks, but I do assert that much that is attributed to it has its origin in the periphery and not in the nerve-center. To-day is the era in medicine of the study of these nervous diseases, and I look for the time to come when many of them that are now classed as obscure may be made as plain to us as others which we do not doubt. I can not, therefore, believe in the "nervous rectum" *per se*, but would enforce again the necessity in all such cases of finding out the origin of the trouble by the closest scrutiny.

As this chapter will be followed by one closely allied to it —namely, The Anal and Rectal Reflexes—I shall not deal with the *treatment* of these diseases just now.

CHAPTER XI.

NEURALGIA OF THE RECTUM.

Under the head of the hysterical or nervous rectum I have already discussed the cases which are commonly called neuralgic, but as in that chapter I did not deal with neuralgia as a term, I desire to say something more of it. E. P. Hurd, in his excellent book upon neuralgia, defines it as "a neurosis whose essential symptom consists in a lancinating pain, paroxysmal in character, described as boring, burning, stabbing, localized in nerve trunks or their terminal branches; apyretic, without redness or apparent swelling; generally accompanied by secondary phenomena of a motor, vaso-motor, or secretory or trophic nature." He agrees with Anstie in considering that neuralgia occurs only in those subject to some impairment of general health.

Allingham says: "I can see no reason why neuralgia should not sometimes attack the rectum as well as any other part of the body." This, to my mind, is a perfectly true statement, and yet I have seen so many cases in a general way that were called neuralgia, in which I doubted the correctness of the statement, that I am loath to name any affection of the rectum neuralgia without a thorough investigation. As will be observed, in referring to the chapter on The Nervous or Hysterical Rectum, I take the position that all cases of irritable, nervous, or hysterical rectum are due to a well-defined lesion; that the pathological condition is oftentimes difficult to detect, and in many instances can not be observed at all. In the cases that I shall now report I failed to find the lesion. Am I to believe that none such existed? Are these cases due solely to a special diathesis, neuralgia, or to the reflexes, the

disease originating in some adjacent organ or tissue? I believe firmly in the reflexes as accounting for pain, and yet in some instances they could be entirely ruled out. In such I believe that a pathological condition, such as congestion, inflammation, or may be the simple exposure of a filament of a nerve, will account for the so-called neuralgia. I have been greatly interested in this subject, more especially for the reason that Hurd gives in his book, when he says that he is obliged to admit that, in spite of the imposing array of remedies, the neuralgic pain will refuse to surrender, and we are obliged in the end to capitulate ourselves and have recourse to the cowardly hypodermic syringe. This is a sad condition to contemplate, and if we can change the opinion that these cases in the rectum that simulate neuralgia are in reality due to a lesion, we stand a much better chance of curing this unfortunate class of patients. In this connection I desire to report a few cases:

Case I.—In the early part of 1891 I saw a patient who gave the following history: Aged fifty-three, small in stature, nervous and melancholy in disposition, free from all evil habits. He complained of a local pain in the rectum, not aggravated by an action from the bowels. An examination of the rectum revealed no lesion, but his symptoms pointed so clearly to one, or at least to an exposed nerve, that I ventured the opinion that he could easily be cured by divulsing the sphincter muscle. This was done under an anæsthetic, and after a short time he reported at my office, saying that the operation had done him no good. He escaped my notice for several months, and during this time had consulted a number of physicians and taken many remedies without effect, and at last came back to me. I subjected him to a rigid examination but could find no particular trouble. I again divulsed the sphincter, this time doing it more thoroughly, and coated the whole of the lower surface of the rectum with a forty-per-cent solution of nitrate of silver. No better result was obtained from this operation than from the first. I sent him to a genito-urinary surgeon, who detected a stricture of large caliber and

divided it, thinking, perhaps, that this might relieve some reflex. The operation, however, had no appreciable effect. The man had taken all manner of tonics, etc., but he continued in the same old way, and a greater melancholic I have never witnessed. There was not a moment in the day but that his mind was on his rectum.

Case II.—A lady, about fifty years of age, in apparently good health, was referred to me with symptoms very like Case I. I made the same promise of relief if the sphincters were divulsed. This was done, but no relief followed. This case took a course very similar to the other one. Numerous physicians were consulted, and her family physician, who was an eminent man in the profession, did everything in his power to relieve her, but to no purpose. The symptoms are those of neuralgia—a dull, aching pain, always present in the rectum, but not aggravated by a movement from the bowels. She is nearly a monomaniac upon the subject of her trouble. We have just agreed to send her to a gynæcologist.

Case III.—A woman, about forty years of age, weighing about one hundred and eighty-five pounds, gave the following symptoms: She had a tormenting pain which she referred to the rectum, but, as she expressed it, the pain was located high up. She said there was no special pain during the act of defecation, but that generally before she went to stool she suffered abdominal pain, which frequently continued for an hour or two. I examined the rectum and could find no diseased condition. I advised her to take copious injections of hot water, and also put her upon Goodell's pill compound, viz.:

℞ Ext. sumbul..... gr. j;
Asafœtida..... gr. ij;
Ferri sulph. exsic..... gr. j;
Acid. arseniosi..... gr. $\frac{1}{30}$.
M. Sig.: Four to be taken during the day.

She took this prescription for some time, but without effect. It was not until several weeks had elapsed, while during a conversation she remarked that she had forgotten to tell me that she had suffered from what the doctor called a pelvic

abscess, which had discharged through her rectum. This of course put a new phase on the matter, and I sent her to a gynæcologist, who afterward told me that her pain was evidently due to adhesions in the abdominal cavity, and that he had recommended a laparotomy. I never heard any more of the case.

I might go on and recite a number of such cases, but these will be sufficient to convey my views. In the chapter on the hysterical rectum I have taken the position that all such cases are due to a lesion, exposure of the filament of a nerve, and in the chapter on the reflexes I contend that if the source of the reflex is ascertained and corrected, the so-called neuralgic pain will disappear, and therefore that these cases do not fall under the head of neuralgia at all. If a nerve filament is exposed, it is the exposure that causes the pain. If there be a lesion or trauma, the pain is due to the injury. I do not, therefore, consider that the neurosis which constitutes neuralgia exists. Anstie says that neuralgia occurs only in those subject to some impairment of general health. I am sure that the majority of such cases, as observed by me, have been in persons of robust health, and I must rule out cases of pain in the rectum caused by reflex from this class. It is a well-known fact that persons suffering from fissure, or from any disease of the rectum which causes pain, become nervous and hypochondriacal, and although Allingham says that these sensations continue after the ulcer has healed, it has been my experience that when they were relieved of the rectal irritation and pain these other symptoms disappeared. Dolbeau, of Paris, considers the essence of fissure to be neuralgic, and defines fissure of the anus as being a spasmodic neuralgia of the anus, with or without fissure. I certainly can not subscribe to any such view as this. The first portion of the sentence, that fissure of the anus is the cause of pain, which perhaps resembles the neuralgic pain, is correct, for this theory fully corroborates what I have said—that a lesion exists which accounts for the pain, and therefore neuralgia is ruled out; but to the latter portion of the sentence, that a

"spasmodic neuralgia of the anus may exist with or *without* fissure," my position is that if there is no fissure and yet pain, it must be by reflex, and therefore not neuralgic. The pathological changes of inflammation, etc., which would go to make up a neuralgic condition of the nerve do not exist in these cases; but when the point of reflex is ferreted out and stopped, no further disturbance of the nerve in the rectum is observed. It is very true, as Hurd says, that so far as the nerve trunk or terminal branches are concerned it may be "apyretic, without redness or apparent swelling." We are very well aware of the fact that one or more of the symptoms of inflammation proper may be absent, and yet an inflammatory condition exist. If a tooth aches and the dentist discovers that it is due to the exposure of the nerve, he would be inclined to prevent the exposure, yet in a case of facial neuralgia we would treat the nerve both locally and constitutionally. Some consider the spasm of the sphincter muscle as the cause of this neuralgic pain. I would argue that if the premise be true, it would not be a neuralgic pain, but simply one caused by spasm of the sphincter implicating a nerve. But I can not believe the premise true, from the fact that I believe the spasm of the sphincter to be caused by the lesion. This is very well illustrated in cases where we have a mass of hardened fæces lying in the pouch of the rectum. A congestion and an abrasion exists in consequence of the foreign body, and excites the sphincter muscle to spasm. Allingham says: "I have been in the habit of calling pain in the rectum or sphincter muscles neuralgic when I have not been able to find out the slightest lesion, sign of inflammation, or discharge of any kind, and where the pain was not aggravated by action of the bowels. This I always consider an important point in diagnosis."

This is very like the custom of some practitioners of pronouncing affections which have certain symptoms as malarial, when said symptoms may be brought about by constipation or a faulty liver. Small doses of calomel in such cases have oftentimes done more good than many grains of quinine, and also by its administration the diagnosis was cleared up.

They say that charity covers a multitude of sins. I am sure that when I was in general practice the terms malaria and neuralgia covered a multitude of my errors. So I am inclined to think about calling pain in the rectum neuralgic when we can not find a lesion. I quite agree with Allingham when he says "an important point of diagnosis is whether the pain is aggravated by the action of the bowels." But this neuralgic (?) condition of the rectum is frequently cleared up by dividing a stricture in the urethra or doing an abdominal section upon the woman. Allingham also says: "I have noticed the attack follow direct exposure to wet and cold by sitting upon damp grass." This is quite a different case, for here we have an exciting cause for the inflammatory condition of the nerve, together with the congestion of the blood-vessels. The question naturally resolves itself into this: Are these cases due solely to a special diathesis, and occur only in the debilitated and nervous person, or are they due to some reflex, the disease originating in some adjacent organ or tissue, or is the pain referable to the point where it is made manifest, say to a lesion, or exposure of a nerve in the rectum? For my own part, I believe that these so-called cases of neuralgia are due, first, to a lesion in the mucous membrane of the rectum, and the consequent exposure of a nerve filament, or, second, the source of trouble is not in the rectum at all, but is reflected from some other organ or tissue. If the case falls under the first division, and the erosion, abrasion, or what not, is close to the sphincter muscle, the pain is aggravated during the act of defecation; and if it is from the second condition, the pain is not aggravated during this act. Therefore I am inclined to believe that the term neuralgia as applied to these cases is a misnomer.

Treatment.—A careful examination should be made of the anus and rectum. It is sometimes the case that a very minute sinus may exist in the folds just at the verge of the anus and be overlooked. It may be that over the sphincter muscle or higher up the rectum there is a peeling off of epithelium or an abrasion of the mucous membrane. Therefore

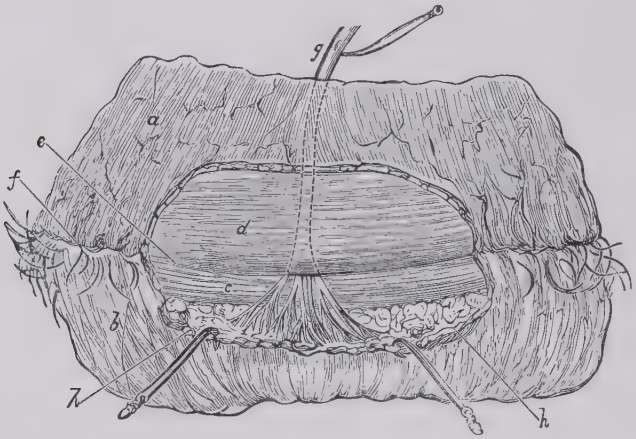
a good speculum should be employed, the room darkened, the patient put upon the table, and, when the instrument is opened in the rectum, the electric light after the manner described should be introduced and a careful search made for the abraded surface. If it is found, a probe with a thin film of absorbent cotton wrapped around its end should be dipped in pure nitric or carbolic acid, and the abraded surface touched with it. If the sphincter muscle is irritable and pain exists during the act of defecation or following it, the sphincter muscle should be divulsed. If no lesion can be found, and the sphincter is not irritable, we are to suppose that this pain in the rectum is reflected from some other source, and each and every organ, connected by nerve influence with the rectum, should be carefully inspected and asked after, and then the patient referred to the specialist to whom he belongs. I have never found that any anti-neuralgic medication did these patients any good at all, and, as I have already said, they were not such subjects as called for quinine, iron, strychnine, or any other tonic. But one point I wish to thoroughly impress, and that is that these patients should not be allowed to take opium for their relief, for it is this very class of patients that become habituated to its use. It has been my observation that hot-water injections aggravate the trouble instead of lessening it, and in several instances I have seen marked benefit result from the use of cold water injected into the rectum, although, of course, I could not suggest this as a general rule. I wish to reiterate what I have said before—that, of all agents to prevent rectal troubles as a class, cold water will be found the most serviceable. This especially applies to congestions, inflammations, atony, hæmorrhoids, both external and internal fistulæ, etc.

CHAPTER XII.

IRRITABLE ULCER OR FISSURE.

There is an anatomical as well as a pathological difference between fissure and an irritable ulcer of the rectum. Fissures are found at the verge of the anus, and should, therefore, be called anal fissures. Indeed, a fissure proper could not exist within the rectum. It is necessary to make this distinction because the treatment depends upon it. I think the ætiology should be considered somewhat in making up our verdict. A consideration of the anatomy of the lower part of the rectum aids us very materially in the consideration of the subject. The predominant symptom developed by a fissure of the anus, or of an anal ulcer, as you please, is pain, and this is made so from the implication of the external sphincter muscle in the trouble. I think in dealing with this special subject, or in rectal disease in general, we overlook the importance of the external sphincter muscle and overestimate the importance of the internal sphincter muscle. I am sure that I have seen cases where an ulcer was situated over the internal sphincter muscle, and was, to a remarkable degree, painless; and yet, when the smallest number of fibers of the external sphincter muscle are implicated in the ulceration, pain is a very prominent symptom. Although the two muscles are in close apposition, it is the external sphincter which controls the outlet and responds in cases of danger. Hilton has pointed out the important fact that the nerves—principally branches of the pudic—which come down below the internal sphincter, pass out between the muscles at the junction to become superficial in this situation.

Now, it will be observed that an ulceration could exist above Hilton's white line and over the internal sphincter muscle, and yet not engage the nerve distribution. But whenever there is an encroachment made upon the external sphincter, the nerve-supply is made to respond. It is a well-recognized



Nervous supply of anus (Hilton.) *a*, mucous membrane of rectum; *b*, skin near the anus; *c*, external sphincter muscle; *d*, internal sphincter muscle; *e*, line of separation of the two sphincters; *f*, the overlying white line marking the junction of the two sphincters; *g*, nerve supplying the skin near the anus, which it reaches by passing first externally to the rectum and then through the interval between the two sphincters; *h*, flap of mucous membrane and skin reflected back.

fact that ulcers located above the sphincter muscle cause very little pain, and I have already cited several cases where an ulceration extended around the gut in its entire circumference above the external sphincter muscle, and yet pain was not spoken of at all. Gosselin divides these ulcers into two distinct varieties—the tolerant and the intolerant. Mollière suggests the terms tolerable and intolerable. I like the division of Gosselin better. I am satisfied that the division line between the tolerant and intolerant ulcer is Hilton's white line. In other words, if the ulcer be located above this line, it is tolerant; if located below, it is intolerant. Quite a good deal of discussion has originated over the cause of this spasm which we find in fissure of the sphincter muscle. Boyer considered it antecedent to and the cause of the fissure; and Van Buren was more or less inclined to

this idea. Ball says: "I have never, however, been able to observe this condition, as it has always appeared to me that the muscular contraction involves the whole circumference of the sphincter, and, in any case, the distinction appears to me to involve a frivolous and practically worthless refinement."

To my mind, there can be no doubt that the existence of a fissure or an irritable ulcer, if properly located, produces the spasm of the sphincter; and I could under no circumstances believe that the spasm of the sphincter produced the irritable ulcer or fissure. It is not necessary to have much of a lesion to bring about this spasmodic action of the muscle. Exposure of the smallest filament of a nerve is sufficient to accomplish it. In many cases it is not necessary to have a lesion or trauma to produce this irritability of the muscle. It is a well-known fact that many of the reflexes will produce this—for instance, from the urethra, prostate gland, a displaced uterus, the retention of the urine, etc. On the other hand, the irritable sphincters from fissure, ulceration, etc., produce many of the reflexes; but this subject has been spoken of in detail in the chapter on the anatomy of the rectum with relation to the reflexes. A fissure of the anus may be caused in many ways, but, of course, they are generally attributable to traumatism. Many persons suffer an irritability of the sphincter, etc., from the fact that the skin surrounding the anus is very delicate and easily impressed; hence, by the use of improper articles for detergent purposes, they may, by friction or otherwise, injure the cuticle, and the filament of a nerve is exposed, or the passage of hard and dry fæces may break the mucous membrane at the verge of the anus, and, because of the constant operation of the sphincter muscle, it refuses to heal and becomes an ulcer from pathological changes. A marginal abscess which has left a small sinus amounts in substance to a fissure with all its symptoms. Where pruritus exists and the patient voluntarily or involuntarily scratches himself with some force, he breaks the skin, and the spasm of the sphincter muscle after-

ward prevents it from healing. In shape, too, a fissure of the anus is different from an irritable ulcer of the rectum. A fissure appears as a distinct cut through the mucous membrane, extending from a few lines to an inch in length, running into the rectum. An irritable ulcer is generally oval, with distinct edges, with a reddish, sometimes a gray, base, discharging pus. The same character of ulcer, located higher up the rectum, would not be called irritable; but the difference of the shortest space characterizes it as either tolerant or intolerant. Kelsey says: "Although these ulcers are generally stated to be due to an act of laceration of the mucous membrane, or to its abrasion from some irritation, they not infrequently originate within the sinuses of Morgagni, and a true fissure may be entirely concealed from view within one of these pouches."

Theoretically, I can not believe in this source as explaining the symptoms of fissure. In the first place, there is no exposure of the nerve filament in the sinuses of Morgagni, and, in the second place, the anatomy does not permit of its being embraced by contraction of the sphincter muscle, as in the other forms of fissure. I have never met with such a case in my practice. Fissures of the anus are usually located dorsally; for what reason I can not explain, except, perhaps, that this portion of the anus is more immovable, being connected more or less with the coccyx. However, we may find a fissure or an irritable ulcer in any portion of the anal circumference. I believe that they are more common in adult life. In infancy, the sphincters are not well defined, and consequently can not act with decided spasmodic force. In old age the parts are more or less atrophied and the nerve sensations are blunted. If these ulcers are more common in women, it is simply because the skin is more delicate. Children are sometimes affected with this form of trouble.

Case I.—A lady brought a three-year-old son to me with the following symptoms: She had noticed for several weeks that every time the child's bowels moved it would cry out with pain, which only lasted for a few minutes; but the little

fellow had learned to anticipate and to dread an evacuation. She had examined the child and found nothing to account for his trouble. Placing him in his mother's lap and opening the anus gently, I could see a slight abrasion, dorsally situated. Recognizing that it required but little lesion here to produce pain, I took a small speculum, introduced it into the rectum, and rubbed the abraded surface with my finger. I directed the mother to give this child an enema of sweet oil each morning preceding the evacuation. I did not see her again for two weeks, when she told me that the child was entirely relieved by what I did for him.

Case II.—A mother brought her infant in arms to me, complaining that the child was very restless and apparently suffered a good deal of pain, especially when its bowels moved. An examination in the anus did not reveal any abrasion. But, acting upon the suggestion brought about by the result of other cases of the kind, I anointed my finger, inserted it in the anus, and swept it around the aggregation of fibers. To the point of my finger it was evidenced that there was a little accumulation of fæces in the pouch of the rectum. I ordered that the child have an enema of hot water for several consecutive days. The next report was that there was no further trouble.

A number of times I have been consulted by physicians for suggestions in cases of this nature, and in each I have suggested that the finger be anointed and inserted in the rectum of the child without any attempt at divulsion. If it is necessary, this method can be practiced each day until a cure is effected. There is no rectal affection that produces such powerful reflexes as an irritable ulcer or fissure of the anus. But as I have devoted special attention to these in another chapter, I think it necessary only to refer to them here.

Examination and Diagnosis.—The symptoms are so pronounced in fissure or irritable ulcer that a surgeon can usually make a correct diagnosis without an examination, although an examination should be made in each and every case. But when-

ever a patient presents himself complaining of the characteristic pain of fissure, whatever he may have in conjunction which may have been diagnosticated by a physician as piles, polypi, cancer, fistula, or what not, I know that he has, in addition, an irritable ulceration. In making an examination, the first thing observed may be an external pile, or a marginal fistula, or a protruding polypus, or an evidence of internal hæmorrhoids, or perhaps a syphilitic ulceration of the bowel, or cancer; for each and all of these can be the cause of an irritable ulceration within the grasp of the sphincter. But whether they exist or not, the circumference of the anus should be examined and the rectum searched for this form of ulcer or fissure.

Ordinarily, by placing the patient in Sims's position on the left side, by the aid of a good light we can see an irritable ulcer or a fissure of the anus. The first thing observed, where a fissure engages the sphincter muscle, is a small, oval tumor of the integument, just at the verge of the anus. I believe that my friend Dr. Richard O. Cowling, deceased, was the first to state that this little tumor was pathognomonic of fissure. Since he called my attention to it many years ago, I have found that his statement was correct. It has been mooted by some whether the tumor caused the fissure or, *vice versa*, the fissure caused the tumor. There can be no doubt that the latter is correct, for the growth is simply an enlarged piece of skin at the lower extremity of the fissure, caused by plastic infiltration. The passage of the finger into the rectum where an irritable ulcer exists causes a great deal of pain, which is likely to last for a considerable time after the examination, and yet, with a little dexterity, this can be averted. Suppose the fissure is located dorsally: Anoint the finger well with vaseline or lard, and, in making the attempt to introduce it into the rectum, have it press upon the front portion, and then, using some force, insert it. Or, if the fissure be located toward the perinæum, press dorsally upon introducing the finger. This examination by the finger reveals very little in a case of fissure of the anus. After it is intro-

duced, we are not able to feel any pathological change, unless the ulcer be one of long standing and is indurated, having distinct edges and base. It is more, however, for the purpose of ascertaining if there is any complication—as, for instance, the existence of any of the diseases which I have mentioned. At the upper part of the fissure a small growth, polypoid in form, may be felt. This is not a polypus, in fact, but is produced by inflammatory changes, just as the larger growth at the bottom of the fissure. If my patients dislike an examination digitally because of the fear of pain, I am not in the habit of subjecting them to it, for the reason that, if an operation is done, anything that exists can be seen at that time and attended to.

Symptoms.—Of all diseases within the scope of the surgeon, a well-pronounced fissure or irritable ulcer is the most painful. This is especially so when we consider the insignificance of the lesion, and yet, of all known cases requiring the surgeon's skill, this can be the most easily and most radically cured. I have seen grown men cry like babies with the affection.

Case I.—A young bank cashier telephoned me to stop at his bank, which I did, when he said to me: "I have a painful rectal trouble which I wish you to relieve." I asked him his symptoms, and he said that for a number of weeks he had experienced some pain at each act of defecation, but latterly it had become unbearable. Upon questioning him and finding that he had no symptoms of hæmorrhoids or other rectal disease, I suggested to him that upon going home that night he should take a purgative, the next morning do without his breakfast, and await my coming, when I would have my assistant give him an anæsthetic, and I would cure him of his trouble. He replied that he would do without his breakfast and take the chloroform, but that he would not take the purgative. I asked him his reason, and he replied that his bowels had not acted for two weeks, and that he would not permit them to act for all the money in the city, and added that he would die first. Of course this was an explanation of

the great pain that he suffered during the movement of the bowels. I did the operation next day for fissure by forcible divulsion, and was compelled to remove a fæcal impaction from the pouch of the rectum.

Case II.—Dr. S. B. Mills, of this city, asked me to see a patient with him who was suffering from some rectal trouble and was in great distress. We repaired to the residence and arrived there some thirty minutes after the man had had an evacuation of the bowels. He was bent over a chair in a complete curve, groaning and crying with pain. Otherwise he was a strong, healthy individual. He refused to be examined, because of the fear of pain, unless we gave him chloroform. This was done, and a well-defined irritable ulcer was found just within the rectum, over the external sphincter muscle. A free dilatation of the muscle was practiced and the ulcer scarified. In a few days this man returned to his home in the country entirely cured.

To show how insignificant the lesion may be that causes this intense pain in fissure, I will recite the following case :

Case.—One of the learned physicians of the city said to me that he had a lady patient from the country under observation who was complaining of a complication of troubles, among which there was a kidney, bladder, and rectal complication ; that he had examined her carefully a number of times, but could not find sufficient trouble to account for her great distress. We went together to see the patient, when she gave me the following history : She said that for a year or more she had had more or less pain during the act of defecation, but that for the last six months her life was one of torture ; that now not only did she suffer most agonizing pain in the rectum each and every time that the bowels moved, but also that the action of the kidneys was also accompanied by distressing pain. She had lost thirty pounds of flesh within the year, and labored under the impression that she had cancer somewhere. The physician had ruled out this opinion, however, and yet was unable to account for her symptoms. I had her lie upon a hard bed,

with the buttocks elevated, assuming Sims's position. By gently opening the anus and having the patient strain down I could see the beginning of a small tear in the bowel, but not of any considerable extent. I called the physician's attention to this spot, and he replied that he had made a similar examination and had seen that abrasion, but that it had not occurred to him that so slight an affair could produce her symptoms. As an examination would be very painful, I suggested that chloroform be administered and that we divulse the muscle, and if any other disease existed in connection with the fissure, it could then be attended to. She was anæsthetized, and with a speculum I divulsed the sphincter muscle, and the crack in the mucous membrane could be seen at the end, in an oval ulcer with a grayish base and indurated edges, located just over the sphincter muscle. No other disease existed. I completed the dilatation of the muscle with my fingers, then, reinserting the speculum, I brought the ulcer into view and scarified it freely. With a little after-treatment this woman entirely recovered, the reflexes to the kidney and bladder disappearing from the time that I did the operation.

We have observed in the recital of one of these cases that the patient had been allowed to suffer for many months with a disease that was eradicated in a few minutes. Very often patients who are the victims of irritable ulcer have told me that not only was the case diagnosticated as some other affection, but also that they had been advised not to have any operation done. It is, to say the least of it, cruel for a practitioner of medicine to give any such advice.

Case.—A woman, aged about fifty, sent for me to see her, that she might be relieved by medicine of a terrible pain from which she was suffering in the rectum. Upon arriving at her house, I found her writhing in agony, and ascertained that the bowels had just moved. She said to me that she must have some medicine to quiet this terrible pain. In questioning her about her case, she informed me that she had had rectal trouble for about six years, and during this time

she had suffered more than she thought any human being could bear. I made an examination, and found just at the verge of the anus, and extending into the rectum, a large, ugly ulcer, with a border that amounted to flaps of angry-looking skin. The whole surface was discharging a bad-looking pus. I asked her why she had never been operated upon. She told me that she had some lung disease, and that she had been advised by her friends, also by a physician at one time, not to have any operation done for the fear that it would increase the trouble in her lungs. It was hard to imagine that this statement could be true after seeing this rectal ulceration and witnessing this woman suffer her terrible pain. To be told that such had existed for six years without any effort at relief was impossible to believe, and yet the case verified the statement. I suggested to her the advisability of an operation, and, after taking time to consult with her friends, she at last consented, and so notified me. I appointed a time and, in company with my assistant, went to the house, gave her ether, divulsed the sphincter muscle, scarified the ulceration, and trimmed away all of the overlapping edges. It is needless to speak of the relief that this poor woman received.

The character of pain experienced from irritable ulcer or fissure is peculiar. Sometimes it begins during the evacuation of the bowels, but I am inclined to believe that this is more the case in irritable ulcer than it is with fissure of the anus. In irritable ulcer, therefore, in the act of defecation, a smarting sensation is noticed, and just following the movement of the bowels a burning pain is experienced, which may last in some cases not longer than ten or fifteen minutes. Some blood or mucus may be observed generally on the action. In fissure proper the patient will tell you that very little pain, if any, is noticed during the act of defecation, but that in about twenty minutes it begins as a sharp, lancinating pain, as if a knife had been stuck into it, which gradually increases for perhaps thirty or forty minutes, and then begins to subside as a dull, gnawing pain, sometimes resem-

bling a toothache. This interim between the movement of the bowel and the accession of pain I believe to be pathognomonic of fissure, for I do not know any other rectal affection that acts after this manner. As I have suggested, fissure or fissures of the anus may be secondary to some other disease of the rectum, as, for instance, produced by the slipping out and in of a polypus. Now, it would do very little good to operate for a fissure and allow the polypus to remain, and yet this has been done from allowing the polypus to escape notice. It is different, however, when a fissured condition of the anus exists in benign or syphilitic ulceration of the bowels. It will be found that by stretching the sphincter muscles the pain, which is the most important factor in the patient's trouble, is relieved, and the ulceration can be treated afterward. I believe that it is easy to differentiate between fissure and other diseases of the rectum. I scarcely see how any confusion could occur, except perhaps with an internal fistula, or, as Vance has suggested, where a cul-de-sac exists in one of the sinuses of Morgagni. And yet I have made several mistakes in operating for fissure, where I allowed the real trouble to escape my notice.

Case.—A lady came to me from the country complaining of pain in the rectum which was increased during the action of the bowels; yet she complained of pain all the time in that neighborhood. She was in the habit of sitting in a cushioned chair, for the reason that, when on a hard seat, she experienced discomfort. The pain was characteristic of fissure, and, upon examination, I had found an abrasion at the verge of the anus; I divulsed the sphincter muscles freely, and assured her that she would be relieved. She returned home, and was in comparative comfort for several months, when she noticed that her "old trouble" was coming back again. She returned to the city, and I made a rigid examination and found that a little internal sinus had begun at the verge of the anus and extended up the bowel about an inch. A probe passed readily through it. I slit it up without giving the patient an anæsthetic, and this effected a cure.

We can not be too particular in making a thorough examination in all cases of disease of the rectum. I have had many women consult me for pain at the lower part of the rectum, and at first glance one would suppose from their description that they were suffering from an ulceration in this locality, but by careful inquiry it would be found that the pain had none of the characteristics of a fissure pain, but was, on the contrary, a dull, aching, heavy sensation, which can nearly universally be traced to a displaced womb. These cases should be referred to the gynæcologist. The discharge from the rectum in cases of fissure or irritable ulcer is generally very small—indeed, often escapes the notice of the patient. It is generally muco-purulent and sometimes bloody. In some cases of fissure, especially during their early existence, I have known as much as a teaspoonful of blood to be lost at a time. This is rare, however, for the ulceration seldom bleeds. Sometimes irritable ulcers are multiple, but generally only one exists, and that one is not often larger than a five-cent silver piece. Fissure is sometimes caused by a difficult labor and may require subsequent treatment, but with a little care local applications will effect a cure. Where I find a well-defined fissure or irritable ulcer in the female, complicated with a displaced womb or other uterine trouble, I make it my invariable rule to operate for the fissure first, and send them to the gynæcologist afterward. Mr. Allingham says that he has many times had reason to repent interfering with these cases, and adds that the successful treatment of the uterine disorder may be sufficient to cure the fissure. Now, I think that this depends altogether upon circumstances. I can not understand how an irritable ulcer or a fissure with its attendant pathological changes in the structures can get well by relieving an anteverted or a retroverted uterus, or by curing any uterine complication. I can understand how, by the pressure of the child's head in utero, a small pile is formed, which will disappear when the pressure is relieved by delivery; but when we have this well-defined fissure or ulcer of which I am speaking, I am

sure that nothing less than an operation for the same will cure it.

Treatment. *Palliative.*—When I see a well-marked case of fissure or irritable ulcer, I must confess that a palliative treatment does not look reasonable; first, because it takes such a long time to produce a cure, and, second, because by an operation it can be relieved at once.

CASE.—A business man came to my office saying that he had some rectal trouble, and, although it caused him a great deal of pain and distress, he did not have the time to quit his business and lie up for an operation, and that, besides this, he was afraid to take an anæsthetic. An examination showed an irritable ulcer with a well-defined base and indurated borders. This was situated over the sphincter muscle, and a fissure had crept down the margin of the anus from it. I explained to this man how simple the operation was and how radical it would be, relieving him entirely in a very short time, and that he would be kept from his business only a few days. He, however, would not submit, intimating that he knew another doctor (?) who had promised to relieve him without an operation. I advised him to go to him, as I did not propose to temporize in the treatment of his case in that manner. I did not see him again for four months, when, accidentally meeting him, he told me that he was still under treatment. An operation would have permitted him to return to his business in four days entirely relieved.

However, there are cases which perforce of circumstances can not be operated on. In such we have to pursue the following plan: First, have the patient clear the intestinal tract by taking a good aperient. He should then be provided with a mild laxative to keep on hand in order to keep the bowels gently soluble. The preparation known as syrup of figs answers very nicely for this purpose. Its purgative action is obtained from the use of senna. Children especially can take this medicine easily. However, any good domestic remedy, such as sulphur, magnesia, or a combination of the two, can be used in the ordinary doses. I then begin treatment by

having the patient wash out his bowel for several days with copious injections of hot water, and then I direct that after each action of the bowels he is to inject into the rectum one ounce of olive oil containing five grains of iodoform. It is a bad plan in these cases to give any injection which contains an opiate. I know of no better way to establish the opium habit. As far as an application by the patient in the form of ointments, etc., is concerned, it seems absurd to try them, for the reason that it would be impossible to anoint the finger with said ointment and push it into the rectum. If any one desires to test this matter, let him try it after the manner I have indicated, and see if all the ointment is not on the lower portion of the finger when it is withdrawn, and the tip of the finger is free of ointment. As a substitute for the finger, an ointment carrier will be found a good thing.

If you have one of these in your possession, it can be filled with the ointment, when, by introducing the instrument into the rectum, the ointment can be deposited. But one objection to the use of this instrument in irritable ulcer or fissure is the pain it excites; consequently I would rather rely upon other methods of treatment. If an ointment, however, is desired, I would suggest the following:

℞ Vaseline..... ℥j;
Iodoform..... 3j;
Carbolic acid..... gr. xxx.

M. A small portion to be used each day with the carrier.

If the ulcer or fissure is at the verge, where it can be seen, then an ointment may be used with some purpose; but in the vast majority of these cases only a small portion of the ulcer can be brought into view. My plan of treatment is as follows: I get the patient's consent to place himself under my observation until he is cured, and I have him report at my office as often as it is necessary. After an aperient has been taken, I direct that, before the patient comes to see me, he is to wash out the rectum with hot water. I place him on the table, and taking a small bivalve speculum, I gently insert it into the rectum, the blades being made to escape the fissure;

I gently open it. The patient will have some fear of this procedure the first time that it is done, but he generally experiences some relief on even a slight divulsion and will not object to it the next time. When the ulcer is brought into view by the speculum, if I find that it is inclined to be indolent, I touch its entire surface with pure carbolic acid. I prefer this to nitrate of silver, because it is a local sedative and does not cause as much pain as the silver, and stimulates just as well. Before withdrawing the speculum, I deposit some vaseline upon the ulcerated surface. On the second visit, which is about the third or fourth day after the first one, I again insert the speculum, and this time blow upon the ulcer, by means of an insufflator, powdered iodoform, or deposit the powder upon it by means of a spatula. This is one of the best agents that can be used in the treatment of this affection. If I had to rely upon any one single agent in the treatment of an ulcerated rectum, I would select iodoform. I now direct this patient to use an injection each night at bedtime of one ounce of oil and five grains of iodoform. An excellent remedy as a local application will be found in the hydrate of chloral in a strong, even a saturated solution. It has a fine stimulating effect; besides, it is a local anæsthetic. I invariably direct these patients to precede the action of the bowel each time by an injection of tepid water, the temperature each day being gradually reduced until the injection is of water that has stood on the dresser over night. I have found that the use of hot water in these cases, continued for any length of time, aggravates the trouble. On the contrary, I have got excellent results in the use of cool, not cold, water. But the rule must be in these cases to do an operation for their relief.

Operation.—Mr. Allingham says, in dealing with this subject: "I have headed this chapter Fissure and Painful Irritable Ulcer, because the symptoms and treatment do not differ, whatever form the ulcer assumes, whether it be elongated and club-shaped, oval, or circular."

In the beginning of this chapter I said that I believed that

the two affections, for I so regarded them, should be considered under separate heads, for the reason that the treatment depended upon such division. To follow out Mr. Allingham's quotation will go far to give my reason for what I have said. It is: "But, as a rule, the small circular ulcer is situated higher up the bowel than fissures are, which generally extend to the junction of the mucous membrane with the skin, the ulcer being more commonly found above or about the lower edge of the internal sphincter."

Now, when we come to speak of the treatment of fissure and irritable ulcer, I shall take occasion to say that all cases of fissures of the anus, with the rarest exception, are curable by divulsion of the sphincter muscles, and that the majority of well-developed irritable ulcers require a division by the knife, not of the sphincter muscle but of the ulcer itself. Even as to the palliative treatment of the disease or diseases, ointments can be applied to some forms of fissures which are external to the sphincter, but in the majority of these cases the disease is within the sphincter muscle, and to which the ointment could not be applied, because it is impossible to introduce it with the finger, and the introduction of the carrier causes pain.

The operations proposed for irritable ulcer or fissure have been much discussed. Boyer first pointed out the fact that division of the sphincter was at once followed by a complete subsidence of the symptoms, and recommended that the incision should extend through the entire thickness of the sphincter. He sometimes went further than this and practiced a double division at different points, putting in a large bougie and plugging the rectum around with charpie. I have known patients that would consent to almost anything for relief from an irritable ulcer in the rectum, even to the cutting through of their sphincter muscles once or half a dozen times, if it were necessary for their relief. But, fortunately, we have ascertained that it is not necessary to divide the muscle at all to procure relief in this affection. Dupuytren was the first to modify this operation by making an incision

only through the superficial fibers of the muscle, and I am satisfied that if any cutting is done, the manner suggested by Dupuytren is the proper method of doing it. Copeland believed that an incision through the mucous membrane alone was sufficient to cure these cases, but Curling pointed out that in the majority of them the ulcer had already penetrated the mucous membrane, the fibers of the sphincter muscle being frequently visible in the floor of the ulcer. Any one in the habit of operating upon these patients has of course observed that Curling was right. I imagine that Copeland came to the conclusion that he did from the fact that, by partially dilating the sphincter at the time that he cut the mucous membrane, the patient was cured, not by the division, but by the divulsion. Dumarquay suggests an operation which consists of a submucous division of the sphincter; he passes a knife up between the mucous membrane and muscle, and divides the latter by subcutaneous division. As it has been demonstrated that the division of the muscle is not necessary at all to cure these patients, this operation can not be recommended. In 1829 Recamier offered a substitute for the cutting operation. His method was as follows:

"One or two fingers were introduced into the rectum, and then, with the thumb outside, the sphincter was pinched up and pressed so as to overcome its resistance. This was frequently repeated in a regular, methodical way, so that no portion of the circumference of the anus was allowed to escape."

Why this method fell into disuse, I imagine, was because it engendered the most intense agony. It was done, and it had to be performed a number of times upon the same patient. Conceiving Recamier's idea, Maisonneuve proposed to effect dilatation in a more rapid and thorough manner by introducing the fingers one by one, till finally his whole hand entered the rectum. When this was accomplished he closed his hand and then withdrew it forcibly. There is no doubt that this method will accomplish the dilatation of the sphincter muscle, but when we consider that it was done without

chloroform, the pain that was incident to it being horrible, it really looked brutal. Then, when we consider that the simple introduction of the hand, especially a large hand, is attended with great danger, for this reason alone it should be ruled out; and yet the operation has been done in this city within the past decade upon a patient who was not anæsthetized. However, Maisonneuve subsequently modified this operation into a simple stretching of the anus with the two index fingers, under chloroform. But this method also fell into disuse, I imagine, for the reason that it did too little, just as his other operation did too much. It is singular, however, that this idea of dilating the muscle for this trouble should fall into disuse, and that the knife should be substituted. A comparison of the two methods, I should think, would convince any surgeon that the divulsion plan was much more satisfactory, and attended with much less evil consequence than the cutting plan. My method of operating for an irritable ulcer, or for fissure, is somewhat different from that laid down by the authors. Ball says: "The best practice, then, is (if operation is decided upon) to stretch completely the sphincter. This is best done by introducing the two thumbs into the anus and then separating them forcibly—first, in the antero-posterior direction, and then laterally. This should be performed quite slowly under an anæsthetic, and by degrees the muscle will be felt to yield. The pressure should be well under control, to avoid rupture as the result of any sudden relaxation of the sphincter. After a few minutes it will be found that the muscle is quite flaccid and has lost its tendency to contract."

Dolbeau, of Paris, is so strongly in favor of forced dilatation of the sphincter for anal fissure that he scarcely admits of any other method. Some authors, in describing this plan of dilatation, use the terms "rupture" and "break," as applied to the sphincter muscle. Although they do not actually mean this, they are bad expressions to use, because students of medicine, especially in their first practice, might do some serious harm in this direction. I have said that I be-

lieved the divulsion plan is best. It is an old adage, but nevertheless true, that experience is the best teacher, and my experience has taught me that a simple divulsion of a sphincter muscle, without any cutting at all, will cure the vast majority of fissures and irritable ulcers. This being true, no risk is run. Outside of experience teaching me this, the pathology of this form of ulcer leads us to the same conclusion. Generally, only a few fibers are involved in this ulceration, and, by simply putting them at rest by stretching them, the ulcer is made to heal. So well recognized is this that Curling reports a case where a gentleman came to him from a distant point to be operated on for a painful rectal trouble. In making the examination, Curling used a speculum in order to see the diseased condition. He found an irritable ulcer, and set the next day to operate for it. The patient did not return, and some weeks afterward wrote Mr. Curling that the examination had entirely cured him. There is a moral in this story that surgeons might profit by. I have had the same thing happen in my practice, which will be observed from the following case:

A gentleman, passing through this city from the East, consulted one of our local physicians in regard to a pain which he described as excessive, occurring after stool. The physician suggested that he have me to examine him. We went to his hotel and, placing him in a good light on the bed, examined him pretty thoroughly externally, but no disease could be found. I introduced my finger into the rectum, which caused him pain. I then anointed the speculum and carefully inserted it, and in opening the blades I saw a recent abrasion rapidly give way as the bowel was stretched in the effort to open the instrument. I explained to him that he had an irritable ulcer, and he remarked to me that he did not have time to remain here and be treated for it, but would go home and return to this city, if necessary. He wrote me soon after that the examination cured him entirely. I should add in parenthesis that my bill was not sent to him until I received his letter.

I must say that I prefer, in the vast majority of cases, the divulsing plan to the knife, and the following is the method that I practice: The bowels should be evacuated, unless we should meet an obstinate patient who refuses to do so on account of pain. On the morning of the operation the patient should be given a large enema of water. When he is anæsthetized I put him into Sims's position, flexing his legs high up on the abdomen, elevate his buttocks, and introduce a Mathews's speculum. With this I rapidly divulse the sphincter and, by closing its blades, change the position of the instrument slightly, and again rapidly distend the bowel. This I repeat three or four times. It will now be seen that the sphincters have lost their contractile force, and the fingers or thumbs can be easily introduced. I much prefer the first three fingers on each hand to the thumbs. They make a more gentle pressure and the muscle is more at your command. I do no violent pulling in any direction, but, having my fingers oiled, I gently pull the muscle, at the same time running my fingers entirely around its circumference until I feel that it is entirely relaxed. I never *break* the muscle. I frequently say to my class that a good guide as to when the operation is complete is to notice the mucous membrane of the bowel as it descends over the sphincter muscle nearly to its lower margin. I now take a soft sponge, which has been dipped in a solution of bichloride of mercury (1 to 3,000), and wash the rectum thoroughly out. If I notice any abrasions at the margin of the anus that have been produced by the stretching, I dust them freely with powdered iodoform. I put no dressings whatever on this patient, for the reason that I direct the attendant or nurse to sponge the anus often with very hot water. This alone quiets pain and it is not often necessary to give a hypnotic. The patients' bowels should be allowed to move regularly each day, and after the movement an injection of carbolized hot water should be given. They should be confined to bed for three or four days, and at the end of a week, or perhaps a shorter time, are able to return to their business. The surgeon should be

very careful in doing the operation of dilatation of the sphincters upon women. It will be observed that the sphincter muscle in the female yields much more rapidly than in the male, therefore much less force is required to accomplish the same result. In the phthisical patient, or one enfeebled from any cause, especially where emaciation has taken place, we should be very careful about stretching the muscle at all. In these cases the knife is preferable, if they can not be cured by the palliative measures. In my early career as a rectal surgeon I thought it necessary to make a free division of the sphincter in operating upon these cases, but I have long since abandoned the plan, knowing that a much more moderate operation will do just as well. If, however, for any particular reason a deeper incision through the fibers is thought necessary, if the anatomy of the rectum will be called to mind, it will be seen that an incision can be carried down through the median line to the coccyx and yet not divide the muscle. My plan of using the knife, however, is simply to scarify the ulcer proper, and not to interfere with the mucous membrane or any of the tissues that are in a healthy condition. I can not understand the necessity of even making a division here into the healthy tissues, to say nothing of the advice not to divide the sphincter muscle.

Allingham says: "I think it wise to incise all ulcers situated about the internal sphincter, for only by so doing can a certain cure be effected. Here are my reasons: If dilatation is employed, the sphincters rapidly recover their power, and fæcal matter may collect in the ulcer, irritate it again, and prevent healing. By a complete division of the external sphincter you can obtain a somewhat lengthy paralysis and a good drain; moreover, the ulcer can be easily dressed and be made to heal from the bottom." If the distinguished author had used the term *scarify* instead of *incise*, I would heartily agree with him; but I must submit that I have never yet found it necessary to make a complete division of the external sphincter muscle in order to cure an irritable ulcer, and it must be borne in mind that the division of the muscle might

frequently be followed by incontinence of fæces. The after-treatment of these cases is very simple. The majority of such, uncomplicated by other disease, get well with very little if any subsequent treatment. But, for fear that the ulcer may leave a trace, it is best to direct the patient to take an aperient each day for a little time, and to use an injection of tepid water into the rectum several times a week. If any uneasiness at all exists, the injection of the iodoform and oil, as suggested, will meet the indication.

If one has the time, and the patient the long-bearing fortitude, a cure may often be effected by the palliation treatment suggested by Adler. If every surgeon were as painstaking as he, there can be no doubt that many cures could be made; but we all know the haphazard manner in which such applications are made. In view of all this I still insist that the dissecting plan is the simplest and yet the most radical of all methods.

CHAPTER XIII.

THE ANATOMY OF THE RECTUM IN RELATION TO THE REFLEXES.

THERE is perhaps no subject occupying the attention of the medical profession to-day of more importance than that of the reflexes. Surgeons in special practice, in all the departments, are giving the subject much study, and the medical literature of the day is filled with articles and discussions on this very important theme. The field of gynæcology likely reveals more evidence of reflex action than any other, yet those engaged in treating other portions of the anatomy in a special way have found much to interest them in regard to the subject under discussion. The oculist, the aurist, the genito-urinary surgeon, etc., have discussed the many points involved, from their standpoint, and much light has been thrown upon a very much neglected field. I have already stated in this book that it is sometimes intimated that a specialist in any one branch is very likely to refer the patient's affection to his field of study, and account for his symptoms from such standpoint. I do not believe that the profession is so selfish as this. Even granting that there were some who would for selfish motives pretend to fix the patient's complaint primarily in his own line, and account for the manifestation of symptoms by reflex system, it could be easily seen and demonstrated by one learned in the subject that his premise was wrong. These patients, as I have said, are generally referred to the specialist, because there are some local manifestation or development at the point which falls under the observation of this particular one. At the meeting of the Ninth International Medical Congress, held at Washington, September,

1887, I had the honor to read before the Section of Anatomy a paper entitled The Anatomy of the Rectum in Relation to the Reflexes. Up to that time very little special attention had been given to the subject. In dealing with diseases of the rectum, it is a matter of every-day occurrence with me that such diseases are observed with a history of reflex symptoms. I desire for a moment to refer to reflex disorders in a *general* way, and then to apply the reasoning in a *special* way. Of course there is a varied group of affections which fall under this head, but they are being individually considered by the different specialists. Therefore, after referring to them as a group, I shall apply the principles to localized disease in the rectum, and to disease which is supposed to be located in the rectum. To have reflex action in any case, we must have (*a*) afferent impressions, resulting from the influence of a foreign body, or a pathological state (such as inflammation or ulceration) acting as an irritant upon afferent nerves, either in some part of their course or in their peripheric sites of distribution—whether such sites be situated upon the external surface of the body or upon some part of one or other of the mucous surfaces within the body. Thus it happens that the determining cause may in some cases be associated with painful impressions, though in many other instances such impressions may be more or less completely absent. Occasionally mental emotions may take the place of peripheric impressions as inciters of abnormal reflex phenomena. The next essential factor (*b*) is that the afferent impressions (painful or non-painful) produced by the irritant or pathological state should pass from the nerves conveying them through a related nerve center which, from one or other cause, chances to be in a state of exalted activity, and thence (*c*) be reflected along one or other set of efferent nerves, so as to produce effects of this or that order. As efferent nerves are distributed to glands and to muscles (both involuntary and voluntary), reflex phenomena may show themselves in one or other of the two principal directions: 1. By the modification of the quantity or quality of some secretion. 2. By the

production of spasmodic contractions in certain muscles, either of the involuntary or the voluntary type.

Now, to illustrate these principles in pathology in a special way, outside of the particular line of which we are speaking, I will refer to the fact that Dr. George T. Stevens says: "Nearly all headaches, neuralgias, almost all cases of chorea, and fifty per cent of all cases of epilepsy, are due to incoördination of muscles of the eyeball."

Of course, this is a broad statement and can not be proved in its entirety, and yet it goes to show that the subject has received very decided attention from this learned man. The subject of peripheral nerve irritation is not a new one. Every one is aware of the fact that errors of refraction will cause headaches. Even the young mother knows that when her infant has eaten too heartily it may have a spasm. Sayre opened up a wide field for thought and investigation when he announced that an adherent prepuce would cause spasm in the male child. It is recognized that stricture of the urethra may cause many neuroses, and the genital organs are responsible for much nervous excitability. And so I might go on and recite many instances which would go to prove that this subject of reflex action may be considered as a principle in fact, but that it requires much study and careful attention sometimes to locate the point from which it starts. But as the field in which I work has been much neglected, in this matter of reflexes, I simply desire to record here my experience and testimony, which will, I trust, enable us to gain a point at least in this difficult study. That I may more clearly elucidate the subject it will be necessary to recall the anatomical bearings of the rectum. The mucous membrane of the rectum is different from that of any other portion of the intestinal tract. It is thicker than that of the colon, and just beneath it is found an increased layer of cellular tissue which connects it with the muscular layer beneath. In this membrane the follicles of Lieberkuhn are freely distributed. In structure they are very like the villi of the small intestines and covered with the same form of epithelium, and

in their walls is a similar arrangement of capillaries. The rectum receives blood from three different sources. The upper part is supplied only by the superior hæmorrhoidal, a branch from the inferior mesenteric, which also supplies the lower part of the colon. The terminal branches of the superior hæmorrhoidal pass to the lower part of the rectum, but the principal blood supply to this part comes from the middle and inferior hæmorrhoidal, which are primary and secondary branches from the internal iliac, which artery affords the principal blood supply to all the pelvic viscera. The middle hæmorrhoidal is distributed to the pouch of the rectum, while the inferior, a branch from the internal pudic, passes across the ischio-rectal fossa and reaches the rectum at its lower part. The internal pudic, besides giving a large supply of blood to the rectum, supplies blood to the bladder, prostate, vagina, perinæum, and external organs of generation. The veins which return the blood from the rectum are numerous. The hæmorrhoidal plexus communicates in front with the vesico-prostatic in the male and the vaginal plexus in the female. While the inferior and middle hæmorrhoidal arteries supply the principal part of the blood to the lower part of the rectum, the corresponding veins return but a small portion of this blood. Almost all the blood from the rectum passes through the superior hæmorrhoidal vein and into the portal system. The nerve supply of the rectum comes from two sources. It receive an abundant supply from the hypogastric plexus of the sympathetic system. In addition to these, we find a supply direct from the spinal system of nerves, those to the rectum coming from the fourth anterior sacral nerve. This is the only part of the intestinal canal which receives branches direct from the spinal nerves. Therefore the great irritability and sensibility of this part can be easily understood. It is a fact that it requires deeper anæsthetization to perform operations upon the sphincter muscle than upon the eye; its nerve supply is greater than that of any other muscle of the body, and comes from three different sources—from the internal pudic, the

fourth sacral, and the posterior sacral nerves. It is a rule in the distribution of nerves that the same nerve supplies a muscle and the integument over it. There is no exception here, for they pass in beneath the external sphincter until they reach the space between the inner border of this and the internal sphincter; then they divide into two sets of branches, ascending and descending. The ascending branches are distributed to the mucous membrane, crossing the internal

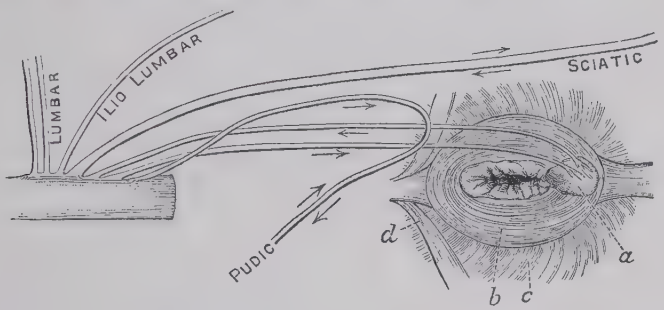


Diagram of the nervous relations of irritable ulcer of the anus (Hilton). *a*, ulcer on sphincter ani; *b*, filaments of two nerves are exposed on the ulcer, the one a nerve of sensation, the other of motion, both attached to the spinal cord, thus constituting an excito-motor apparatus; *c*, levator ani; *d*, transversus perinæi.

sphincter; the descending to the integument. The principal one of the nerve branches to this part comes from the internal pudic, a branch from the lower part of the sacral plexus. The pudic nerve is distributed to the muscles and integuments of the perinæum, to the penis and integument of the scrotum in the male, and to the corresponding part in the female; hence the relation and great sympathy between the lower rectum and all parts of the perinæum and external organs of generation. The sphincter ani and the sphincter urethræ muscles are supplied by the same nerve. We have also traced branches from the fourth sacral to the bladder, prostate, and vagina. Tracing all these nerves to their origin, we find that the spinal nerves supplying all the pelvic viscera, all the structures forming the perinæum and external organs of generation, are given off from the same point in the spinal cord. Hence it is easy to understand that the rectum is a great power in the local reflexes, and can be irritated in return.

Because of the abundant blood supply of the rectum, it is natural that in the exercise of its peculiar office its blood-vessels should often be in a state of congestion, and this alone excites to reflex action, and constipation is a great breeder of disease for this reason. As a result, we frequently find in women reflexes, producing pain in the bladder, mouth of the urethra, womb, back, thighs, ovaries, vagina, perinæum, etc. In the male, pain in the bladder, penis, urethra, scrotum, prostate, etc. Many of these troubles are directly traceable to the rectum as their source, and yet this fact is often overlooked. The relation of the rectum with the peritonæum is so close that abdominal pain is but a reflex from these parts. The meso-rectum, dipping as it does within a finger's length of the outlet, is contiguous enough to take on inflammatory action from many conditions that may exist in the rectum. I have had occasion to point out, for this reason, the dangers that might arise from injecting internal hæmorrhoids with carbolic acid. We have seen how easy it is for the rectum to become congested, because of its vast blood supply and dependent position. Being equally supplied with nerves, this congested state causes great reflex action. It is my observation that when the rectum is congested, from whatever cause, the discharge of mucus is taken as indicating more trouble than really exists. Charlatans are in the habit of parading these symptoms as of the gravest importance, and many fall into the trap. The reflexes from this congested condition of the rectum are often shown upon the womb and its appendages.

Case.—A lady, aged twenty-four, married, was referred to me by a gynæcologist. History: She had complained for many months with backache, pains down the thighs, general lassitude, melancholia, a bearing-down sensation in both the vagina and rectum, pain over the seat of both ovaries, constipated habit, leucorrhœa, loss of flesh, irregular menstruation, difficult micturition, and a slight discharge of mucus from the bowel. Upon an examination of the womb and its appendages by the gynæcologist, there had not been enough trouble found to account for her symptoms. He treated her

for several months, however, and, her case not clearing up, he advised her to consult me. Upon examining the rectum with a speculum, I found it highly congested, very red and sensitive, and a film of mucus covered the entire circumference of the gut for several inches up. The cause for this extensive congestion was not discernible. I was satisfied, however, that all the symptoms mentioned were purely reflex from the rectum, and proceeded to treat her. Hot-water injections were ordered to be taken twice daily for several days, after which the entire portion of the congested gut was brushed over with a forty-per-cent solution of *nitrate of silver*. After three or four days I had her inject into the rectum *fluid hydrastis* and water, equal parts, throwing in about one ounce each time. The solution was gradually increased until the pure *liquid hydrastis* was used. The redness of the mucous membrane and all pain gradually disappeared, the discharge ceased, and all reflex trouble vanished.

To have a reflex act there are three things necessary: 1, an afferent nerve-fiber; 2, a transferring center; 3, an efferent nerve-fiber, forming a reflex arc. From the nerve supply of the rectum it can be easily seen that pain would be manifest over the sacrum and coccyx in rectal disease. If the disease is limited to the lower part of the rectum the patient will complain of pain at the end of the coccyx; if the disease is in the central part of the rectum, the pain will be in the center or lower part of the sacrum; and when the disease is in the upper part of the rectum, the reflex will be in the upper part of the sacrum, the innominate arch. The location of the reflex, therefore, will indicate the part of the rectum involved, demonstrating that the nerves to any part of the rectum, and to the posterior surface of the vertebral column opposite these, are given off from the same point in the spinal cord, bearing the same relation as the nerves to a muscle and the skin over it. Therefore I would call attention to the fact that the rectum having a nerve supply direct from the spinal system, through the fourth anterior sacral nerve, it is often the case that a diseased rectum, by reflex to the cord, may

give symptoms simulating grave trouble of the same. The following case will illustrate this fact:

Case I.—An army officer was referred to me for examination and treatment of a large rectal prolapse. He was then under treatment for supposed locomotor ataxia. Upon questioning him concerning his general condition, the following symptoms and history were elicited: Pain in both legs, with a decided unsteady gait; great nervousness, weakness of both legs, loss of sexual power, persistent constipation, heavy bearing-down pain in the rectum, numbness in feet and legs, melancholia, and general restlessness. Upon forcing out the rectum after an enema, a very large prolapse was discovered, which had existed for many years. Taking the diagnosis of ataxia as correct, I could not promise him much from the operation for prolapse, except to free him from the inconvenience of the protruding mass. The operation was done, however, and as the wounds healed, all symptoms here described began to gradually disappear. After two months he pronounced himself cured of all trouble—rectal, spinal, etc. He now walks a steady gait and great distances, bowels regular, sexual appetite and capacity returned, no pains or numbness in legs, and he expresses himself as being altogether a different man. It was clearly shown by the operation that the whole train of symptoms was reflected from the rectum. The chief nerve supply is to the lower part of the rectum, hence it is that we get some very decided reflexes by having this portion of the gut diseased.

Case II.—Mr. J. C. H., aged thirty, a commercial traveller by occupation, came to consult me about an uneasy condition of his rectum. He said that there was no special pain, but that he felt a general uneasiness, not only in the rectum, but in all the contiguous parts. In the perineum was a sense of weight, the action of the bladder was sometimes interfered with, frequently had pain in the urethra, his back often ached, and he would frequently sit down to get relief from these symptoms. He said that they were aggravated to a certain degree by the act of defecation, and that for this reason

divulsion of the sphincter muscle had been practiced in his case three distinct times by three different surgeons, and that for a while he would feel somewhat relieved, but after a little time the old sensations would come back. I examined him carefully, and detected two small ulcers situated on the left side of the bowel, just above the internal sphincter muscle. Dorsally located was a fibrous structure which felt, to the finger, as cicatricial tissue. I did not use a probe, expecting to do so later. I said to him that, in the majority of such cases, the divulsion plan was usually practiced, but that in his case I thought the knife would have to be used in conjunction with the divulsion before a cure was effected. He was put under chloroform, when I forcibly divulsed the sphincter muscles and scarified the ulceration. I then took a probe, and, inserting it over the hard tissue, I discovered a small sinus beginning therein and running up the mucous membrane about one inch. I laid this freely open. After recovering from the effects of the operation the patient no longer complained of any of the reflex symptoms.

Case III.—Mr. M., a prominent merchant, was brought by his family physician for the purpose of consulting me in regard to some rectal complication. The physician regarded his stomach as the objective seat of trouble, but he said that latterly he had complained of an uneasy sensation in his rectum, together with his other symptoms, and that he desired to have it investigated. He gave the following history: About five years before he had begun to feel bad in a general way. He imagined that he had dyspepsia or indigestion because of abdominal pains, from which he frequently suffered. Although he could not say that these pains were connected or had any relation with his eating, yet he imagined that certain articles of food disagreed with him. He was so pronounced in this opinion that his physician had dieted him for several years, during which time he had lost a great deal of flesh, and had quit business. In conjunction with the abdominal pains, he also suffered pain in the back and was easily fatigued. His bladder was disturbed and the

organs of generation influenced. He expressed himself as being impotent at the time. The patient himself believed that he had more serious trouble in the rectum than his physician suspected. Being comparatively a young man, with no organic disease that could be found, I thought that most of his trouble was possibly reflex, and that the difficulty would likely be to locate the source of irritation. He was given some preparatory treatment in the way of clearing out the alimentary tract and washing out the rectum, when he was placed upon an examining table, and by the aid of a speculum and the *electrical search light*, the rectum was examined thoroughly. The lower portion of the bowel was free from any special change; but about five inches above the external sphincter muscle the gut was denuded of its epithelium for a considerable space, and the mucous membrane underneath looked red and angry, and was evidently thickened. I could not detect any pus upon the surface, but a large amount of mucus fell into the speculum and had to be wiped away. I brushed the entire abraded surface with pure carbolic acid, and then coated it over with oil containing iodoform. I put the patient to bed, gave him a special diet for some time, and medicated the rectum by mild local applications, until the redness had disappeared and the reflexes had gradually vanished. At the end of three weeks he accompanied me to a restaurant, where a full meal was ordered, embracing especially those things which had been forbidden him, and I asked him to eat heartily of each and every article. This he did without reserve, and suffered no inconvenience whatever from the meal. I discharged him as cured, and he returned to business, gained flesh, and was happy.

Case IV.—Dr. D., aged forty-eight, gave a history of dyspepsia in an aggravated form. In narrating his own case he said that for a number of years he had been unable to take solid food, and had limited his diet to the fluids. Upon different occasions he had tried to eat something more substantial, but each time had paid a fearful penalty, in that such pains were excited in the stomach and intestines as to

put him to bed. One prominent symptom in his case was gaseous distention, and frequently he was enabled to trace the route of the pain through the transverse into the descending colon, and imagined often that it located itself in the sigmoid flexure. But there was such a sense of uneasiness in the rectum, attended with a great discharge of mucus, that he consulted me. I examined the abdomen carefully by palpation, etc., but could detect no morbid growth. I therefore gave the rectum a rigid examination. Inserting a long tubular speculum and withdrawing the guide, it could be seen that the upper part of the gut was intensely congested, and discharged mucus freely. I gave a diagnosis of an existing proctitis, and the opinion that this inflammatory trouble extended to the mucus membrane of the entire colon. I therefore suggested that he take a systematic course of treatment for the trouble. As he had complained of constipation, I put him upon a brisk aperient treatment for three or four days. Then confining him to his bed, I proceeded to treat him in the following manner: Having him assume the Sims position with the buttocks elevated, so as to throw the abdominal contents forward, I introduced a No. 5 Wales rectal bougie fully into the sigmoid flexure. Through this I injected the fluid extract of *Pinus canadensis*, a desertspoonful to two ounces of water. This I repeated each day for a week. Not getting the benefit I desired, I substituted *fluid hydrastis*, and preceded the injection by throwing into the sigmoid from a quart to half a gallon of hot water. This was allowed to remain until by a natural inclination it was passed off. The *fluid hydrastis*, diluted with four parts of water, was then deposited in the sigmoid flexure. In conjunction with this local treatment I had him take thirty drops of the *fluid hydrastis* in half a cup of water three or four times a day. His diet was of fluids only. After the lapse of eight or ten days he expressed the opinion that he was materially better. The reflected pains had disappeared, and the mucous discharge so materially lessened as to be scarcely perceptible. Being a physician, he learned to introduce the

instrument himself, and I advised him to keep up the treatment, injecting every other day, instead of daily, for an indefinite time. I saw him again after the lapse of several months, when he told me that he had gained flesh, and was able to take some solid food, although certain articles of diet still disagreed with him; that he had not observed any mucus, and, although not absolutely well, was very greatly improved.

This case evidences the fact that patients are sometimes treated for dyspepsia with the stomach as the objective point, when in reality the indigestion is referable to the intestinal tract. The reflected pains that this man suffered started, I am sure, and were kept up, from the rectal irritation. As soon as the proctitis began to disappear and the mucous membrane of the rectum grew paler, the reflex symptoms diminished.

Case V.—Mr. S. B. B., aged twenty-six, in appearance a stout, robust, healthy man, about five feet eleven inches tall, and weighing one hundred and sixty pounds, slightly inclined to *embonpoint*. This man had passed through the hands of a number of regular practitioners and several specialists, and was at last referred to me. He detailed his own case in about these words: "I get no sympathy for the pain I suffer, because, as you observe, I look perfectly healthy. I have tried to persuade my own mind that my distress is purely imaginary, but I am in such a condition that unless I get relief I am certain I will have to abandon my business. My distress consists in a constant pain in the back and down the thighs. My rectum feels as if it is never really unloaded, and there is distressing, gnawing, aching pain there always. Sometimes this pain is aggravated by the act of defecation, but usually it is not. My bladder acts irregularly, and oftentimes with pain. To sum it up, every organ that I have below my waist seems to be affected, and I have consulted a number of physicians and several specialists, the last one being a genito-urinary surgeon, who suspected that I had a stricture, but at last concluded that I did not, and referred me to you."

I asked him about any discharge from the rectum, and he

said there was some mucus, but not a great deal. No pus, that he had ever detected, and only a drop or two of mixed blood, occasionally. I examined the rectum with my finger first and found one sensitive spot. The prostate was a little enlarged, but not much above normal; slightly sensitive, but not acutely so. The sphincter muscle was spasmodic. I suggested the operation of at least divulsing the sphincter muscle, and while doing so to search for any other trouble. To this he consented, and the next day he was put under the effect of chloroform, when I freely divulsed the sphincter muscles, but could not find any particular disease. For several weeks he expressed himself as being greatly relieved, after which the same pains came back. Supposing that this was a case of neuralgia of the rectum, I suggested that he try a thorough course of electricity, and referred him to a competent man. It was used on him for several months with no appreciable effect. I had him again consult a genito-urinary surgeon, who for several weeks passed every alternate day a good-sized sound into the patient's urethra. The reflexes were again thoroughly established, and he came back to me. This man referred his trouble either to his prostate or to his rectum—he was unable to decide which—and I must confess that I was just as unable to decide the question as he. I asked him to lie on the table and let me make another examination of his rectum When I reached this sensitive spot, which was dorsally situated, he complained of pain. Keeping my finger upon the spot, I took a long probe, and, inserting it alongside my finger until it reached this particular place, I searched for a little time for any opening that might exist. At last my search was rewarded by the probe slipping into a sinus, which ran up the mucous membrane at least one inch. Whether this sinus had developed since I first examined him, or whether I had overlooked it in the beginning, I am scarcely able to say. Anyway, I asked him to take an anæsthetic again, so that I might divide it. He readily agreed to this, and, being anæsthetized the second time, I divulsed the muscles again, and, putting a small

grooved director through the sinus, slit it up. Not being content with this, I applied pure carbolic acid to the tract. He remained in bed a week, then came to my office and told me that he was satisfied that we had at last struck the right place. He improved from that day, and, although he came back to see me several times, he never complained of the reflexes. This case, I am sure, would have been classed by some as purely neuralgic. In looking through the speculum, no trace of the opening or sinus could be seen, and even an expert finger could not detect it. Of course it can not be denied that all the reflex symptoms were due to this one local point, as they cleared up after dividing the sinus.

Case VI.—Dr. W. S., aged thirty-two, apparently in good health but of a nervous disposition, lived in a country town and had a large practice. He gave this history: That for many years he had had a highly colored and scanty condition of the urine, which burned him at the act of passing; that for several years he had thought he had a urethral stricture, at least had been treated for such; believed that his prostate was hypertrophied, and that in consequence he had a burning sensation in the rectum, but in addition to this had considerable pain during the act of defecation and for several hours afterward. He thought that a free divulsion of the sphincter muscle would do him good. I examined him per rectum, found his prostate somewhat enlarged and sensitive, and the surrounding mucous membrane slightly congested. There were several sensitive spots in the lower rectum but no distinct ulceration. He took chloroform, and I dilated the muscle forcibly. He returned home in a few days, and wrote me at the end of two weeks that he was materially improved. After the lapse of six or eight months he came back, complaining very much as he did before, and insisted upon another dilatation of the sphincter. This was done under protest, because I believed that his trouble was reflected to the rectum, and not from it. At the same time that I divulsed the muscle I cut through some of the muscular fibers, but told him before he returned home that he might be temporarily

improved by this course of treatment, but that I did not believe it would be a radical cure, and suggested that his prostate was to blame. Several months after returning home he wrote me the following: "I write you this morning to give you the result of the operation you performed on my rectum some months ago. The operation was of great benefit to me, but, as you foresaw, would not and has not cured me entirely of my rectal trouble. However, I am materially better than when you saw me. I have no aching after stool, and most of the time I have no uneasiness or feeling of discomfort. I have lost that sensation of rawness and burning at the sphincter. I am as strong sexually as I ever was, and have no pain during sexual intercourse; on the contrary, I feel better for about twenty-four hours afterward. I have been riding in the saddle, nearly ever since I returned home, an average of twenty to twenty-five miles per day. The riding at first seemed to do me good, but during the last two or three days has produced a feeling of soreness in the perinæum. I am of the opinion that all the trouble that I now have in the rectum is from the prostate, although I have no discharge whatever from the urethra, and but slight tenderness on pressure per rectum. My urine for twenty years has been high-colored, scanty, and producing a burning and hot sensation during the act of urination."

It will be seen by studying this case that there was a combination of circumstances to be considered in its treatment. The gentleman had had some bladder disturbance for twenty years. For a number of years he had recognized a prostatic enlargement, although a young man. The loss of power in the act of coition, together with many other symptoms, pointed clearly to a stricture of the urethra. It will be observed that he states in his letter that that power was restored by the operation which I did upon his rectum, though this may be purely imaginative. My idea is that by stretching the sphincter muscle, tension of the parts was overcome, and that as long as the relaxation exists he does not feel the reflexes perceptibly. The sphincter, which is always spasmodic with

him, loses this spasm by divulsion, and whereas he is benefited by this plan of treatment, it simply lulls him into the belief that he is cured. May it not be that a stricture of large caliber exists in the urethra, and until that is eradicated he will suffer the symptoms of which he complains?

The two cases which are to follow will very beautifully illustrate this special point, and will also explain the difficulty in making up a diagnosis.

Case VII.—A distinguished genito-urinary surgeon of this city met, in traveling, a Western physician, who said to him that he had great irritability of the sphincter muscle, attended with a great deal of pain, not connected, however, with the act of defecation. The surgeon advised him to come to me for treatment, which he did. Upon questioning him, I was satisfied that the rectum was not the locality for the reflex, but gave him a careful examination, and, as far as the rectum proper was concerned, found no trouble. But when I touched the prostate I found it so sensitive as to elicit a cry of pain from him. Being satisfied that this was the point from which the reflex to the rectum came, I advised him to be examined and treated by the genito-urinary surgeon who was so kind as to refer him to me.

Case VIII.—The next case was very similar in several particulars. A genito-urinary surgeon, living in one of the large cities, consulted me in regard to himself. He said that for several years he had been annoyed by a constant feeling of distress in the rectum; that it was just sufficient to keep him uneasy. Outside of passing mucus he had no discharge from the rectum, and the pain was not aggravated by defecation. He had consulted some surgeon in his own city some months ago, and he had removed from the rectum two hæmorrhoids, but, from the description, they must have been insignificant in size. The operation had not in the least lessened his trouble. I examined him with the finger, and immediately detected a large and sensitive prostate. Of course, under the circumstances, I could only say: "Physician, heal thyself."

Case IX.—A lady, thirty years of age, of fine physique and good family history, was sent to me with the following symptoms: A constant burning, lancinating pain over the left lumbar region. This was her main distress, though she complained of pain in the rectum, with a discharge of mucus and pus. An examination revealed that she had an internal fistula, which began just within the anus, extending around the gut to a considerable depth. She was anæsthetized, and the operation done according to the rules laid down. She improved materially, having only occasionally severe pains in her back. When she first came to me she was able to walk scarcely at all. After a little while she could walk a number of squares without fatigue. As the wound healed, the pain only occurred at intervals, until at last she had attacks of severe pain, though not constant, just as severe as originally. Although now she has distinct exacerbations from pain, she still, at the present writing, has at times a very terrible distress in the same spot that she did before the operation. This good woman has no neuralgia of the rectum, but she certainly has neuralgic pain in the region referred to, which evidently originates in the rectum. The question is, if the fistulous tract produced this pain, as it unquestionably did, why is it, after the eradication of the fistula, that she still suffers just as severely, and only at intervals? Can it be that a nerve is still embraced, perhaps in the cicatrix, or is it that the nerve took on inflammatory action a good while ago, and is still so affected?

Case X.—Mr. H., a prominent banker of this city, was seen by me under the following circumstances: He had been an invalid for about one year. During the early part of his illness he had consulted an itinerent physician in regard to some hæmorrhoidal trouble, and was treated by him, I think, by the carbolic-acid plan of injection. Some time after this his health began to fail, he lost flesh and energy, and complained of erratic pains. His natural disposition was a nervous one, but he was a very energetic man. He continued to lose flesh and his nature was radically changed. It was pro-

nounced by several physicians who saw him that he had *malignant* disease, but the exact location was never defined. Being a prominent man, it was circulated through the press that he was in a dying condition, and upon several occasions he bid his friends good-by with the belief that he would never get well. About this time I was called in consultation with one of his surgeons. Visiting him one afternoon, we found him sitting in a large chair on his front porch. As we approached him, he looked to me as a man that could not live long. He was very feeble, pale, emaciated, and melancholy. He asked us to be seated while he detailed to us his case. It was not my desire to know anything of his former treatment, or any opinions of his case that had been expressed by others. I simply wished to know what his symptoms and condition were at the present time. He was scarcely able to finish a recitation of his case. Between his sentences he would stop to rest, and I suppose that he occupied fully three quarters of an hour in telling us his condition. He said that he had sent for me because of a rectal complication that was not only giving him great pain, but was rapidly exhausting him; that the greatest distress with which he now suffered was pain during and after the act of defecation; that he had then, and had had for some time, a distressing diarrhœa, that could not be controlled by medicines; that each and every time his bowels moved the pain was so great that he could scarcely bear it, and he stated again the fact that between the diarrhœa and the pain he was rapidly going down. He also remarked to me that he did not have long to live, and the principal reason for sending for me was to know if I could do anything for him that would let him down to his grave in peace. After he finished this recital his attending physician and myself, aided by a negro servant, helped him through the hall into his room and on to his bed. I told them that I desired to examine his rectum with my finger. He said he dreaded this from the fact that it would cause him great pain. Assuring him that I would be as gentle as I could, I anoint-

ed my finger and passed it into the rectum. I found great resistance from the sphincter muscle, which was hypertrophied, very irritable, and spasmodic. In getting my finger well into the rectum, and sweeping it around the upper edge of the sphincter, I detected a well-defined *ulceration* extending around the circumference of the gut. I then withdrew my finger, when he asked me if I was through. I informed him that I was, and that I did not desire to use the speculum, because it would give him great pain, and could reveal no more than my finger had. He then said: "What is your verdict? Can you do anything for me?" adding: "I want you and the doctor here to tell me plainly to my face, as it is not necessary for you to go out of the room." I then said to the physician: "I suggest that the patient be put under an anæsthetic, and that we practice *forcible divulsion* of the muscle, and do for the ulceration what we can." His physician readily acquiesced in this, and, turning to the patient, explained what we intended to do. He asked us if we expected to do it then. We replied that at that hour it was too dark, and that we would come out the next morning before breakfast and do the operation. Both his physician and myself said to him that in his present condition there was danger in giving him the anæsthetic, but that the operation could not be done without it. He turned to me and said: "Can you tell me, if I should die on the table, will such a death invalidate my life policies?" His physician and myself replied that we had no idea that it would invalidate them. He said: "All right, gentlemen, come out in the morning and I will be prepared for you." During this conversation the point was brought out that, notwithstanding his enfeebled condition, the terrible pain, and mental distress over the idea that he would not live long, he had a splendid appetite and indulged it, adding that he frequently would lie awake at night thinking with pleasure what he would eat for breakfast. After directing that he leave off his morning meal, we said that we would come out to his residence and eat breakfast. We then left the room, and his daughter, fol-

lowing, accosted me and said: "What do you think of my father?" I replied that I thought him in a very serious condition. She informed me that there had been many opinions given in his case, and that several eminent physicians had pronounced his disease cancer, but did not seem to know where it was, and asked me what I thought about it. I said in reply: "From his appearance and present condition, I must say that I also believe that he has a cancerous disease." My reason for giving this opinion was—first, I had heard and read of this case for a number of months. It had been firmly impressed upon my mind that the belief of the physicians who had seen him prior to me was that he was dying of *malignant* disease. Second, when I saw him he looked to me very much like a man who had been reduced to the state in which I found him from such disease. He was greatly emaciated, of bad color, wonderfully exhausted, suffered from a diarrhœa and an exaggerated pain. It never occurred to me that the ulceration in his rectum had been overlooked as a factor, if not the great factor, in his case, that had brought him to his deplorable condition. The next morning, a little after sunrise, his physician and myself drove out to the residence and found the patient ready for the operation. He expressed no fear about the consequences, but was in rather a cheerful mood and desired us to proceed. His attending physician gave him the anæsthetic, of which he took quite a good deal. When fully under its influence I drew him into Sims position, anointed my two thumbs, and slipping them into the rectum, I hooked them over the sphincter muscle. When I made an effort to divulse it I found it a difficult job to do. It had great resisting power because of its indurated and hypertrophied condition; so, after divulsing it to a certain extent with my thumbs, I introduced the three first fingers of each hand, and it required all the force that I could command to break down the resistance. This was, however, done, and then I took my two first fingers of the right hand and thoroughly rubbed and scraped the ulceration all around the circumference of the gut until it became smooth and bled freely.

We then irrigated the rectum, and allowed him to come from under the influence of the anæsthetic. I did not see him again for some time, but was informed that he was doing well and apparently improving. After several weeks he was enabled to walk around his house and out on his lawn. At the end of sixteen days I visited him with his physician. He told me that there had been a grand improvement; that he had his actions in comparative ease, and that in the sixteen days he had only had eighteen actions, whereas, before the operation, he had had the diarrhœa of which he had spoken. After a little while more he was driven into the city to his place of business, where he would remain for a time and return to his home for rest. The reflected pains gradually disappeared, he took on flesh, and after a few weeks resumed his business at his bank, having fully recovered from his malignant (?) disease.

This case speaks for itself. That his whole train of symptoms was due to this irritable ulceration in his rectum I do not think any fair-minded man can doubt. I am also satisfied that if the operation had not been done he would be in his grave now. I must also admit in the report of his case that I shared the opinion that the other physicians had given, that his trouble was *malignant.* Therefore I simply have to say that as far as that opinion was concerned it was a mistake. However, I have the satisfaction of knowing that I did the operation which saved his life, and was warranted in so doing. It must be conceded that had this man died under the effect of the anæsthetic, I would have been censured for advising it; but my own conscience would have been clear in such event, although such a termination would have hurt me in many ways. I think the case demonstrates, too, that the power of the reflexes is of most wonderful concern in disease, and that it is a study worthy of our attention. Sometimes great operations result in but *little* good. In this instance a small operation resulted in *great* good.

Ball says, in his admirable book on The Diseases of the Rectum and the Anus, in regard to this particular operation and its results, that "in the whole range of surgery there

are but few diseases which, while of a very limited extent, produce such extreme misery to the patient, and none in which surgical treatment is attended with more certain success, than in the affection under consideration—viz., irritable ulceration of the rectum."

Cripps says: "The symptoms to which an anal ulcer gives rise are especially painful and distressing to the patient, but it is within the power of surgery to afford complete and permanent relief by the simplest operative procedure. I have known a strong and otherwise healthy man practically incapacitated for business from one of these ulcers no larger than a threepenny-piece."

Allingham says: "The disease, irritable ulcer of the rectum, wears out the patient's health and strength in a remarkable manner. The constant pain and irritation to the nervous system are more than most persons can bear. I have frequently seen women suffering from a small anal ulcer who thought they must have cancer in consequence of their extreme illness and pain. What, under these circumstances, is very extraordinary, is the length of time people go on enduring the malady without having anything done for it. I have known patients who for hours could not bear to stir from one position, the least movement causing an exacerbation of the pain; it often continues very severe, and of a burning character, or it is of a dull, heavy character, and accompanied by throbbing which lasts for hours, sometimes even all day, so that the patient is obliged to lie down and is utterly incapable of attending to any business."

In explanation of this terrible pain that patients suffer, Allingham says: "The lower part of the rectum, and the anus, are very fully supplied by branches of nerves from the sacral plexus, and more especially from the pudic. These nerves send numerous branches between the fibers of the sphincters, and immediately beneath the mucous membrane; thus very superficial ulceration exposes a nerve, and the slightest touch or contraction of the sphincter causes intense pain."

Every author who has written upon the subject of rectal diseases has called attention to the fact that an irritable ulceration of the rectum is the most painful and distressing of all rectal affections. Many of them have mentioned that, because of the great pain and the numerous reflexes incident to the disease, it has often been mistaken for cancer. Unrecognized, it goes on until the patient is so exhausted and distressed that life is a burden to him.

Case XI.—Mrs. Y., a young widow, was sent to me from an interior town in Kentucky, conveying a note from her family physician stating that she had been an invalid for several years and had been treated in a general way for many complaints, and had been in the hands of a gynæcologist for womb disease, had received treatment from a neurologist for nerve exhaustion, and added that the lady was very intelligent and would detail her own case. She stated in substance about this: That for many years she had been of a constipated habit, for which she had taken many drugs; that about two years ago she began to suffer pain in her abdomen, her back, and her thighs, and also mentioned that she believed that she had heart trouble. I desire to state in this connection that a disturbed heart action is a reflex which we sometimes see with disease of the rectum, especially of its upper part, for an irritation of the rectum will *inhibit* the action of the heart. This is very clearly shown when the patient is under anæsthesia and the sphincter muscles are divulsed; it is very common for the pulse to become quite weak. She had been told that these symptoms indicated womb trouble, and she had been sent to a specialist to be treated for it; that he had told her that her womb was displaced, but that there was no special disease there. She said that about two years ago she began to pass some mucus from the bowel, but paid very little attention to it until she began to be attacked with a morning diarrhœa, which consisted principally of a discharge of mucus. She said, however, that she would have one daily evacuation, normal in amount and consistence. At last she began to realize that,

just before and during the act of defecation, she felt worse; not that any acute pain was caused by it, nor did she refer the uneasiness to the lower part of the rectum, but said that whenever she felt a desire to go to stool there was a "sickening" pain all through the bowels, and after the bowel had acted she frequently felt nauseated and faint. She had lost some flesh, had become nervous and fretful, and regarded her malady as a serious one. I had her rectum thoroughly cleansed by an enema, after she had taken a purgative, and I submitted her to an examination with the speculum. [In this connection I would say to those who do not possess a special set of speculums, that if they will take an ordinary six-inch gutta-percha speculum and insert through it a Wales's rectal bougie, and have the point of the bougie to extend about two inches through the instrument at the furthest extremity, then anoint the instrument and the portion of the bougie that is shown, insert into the rectum, and then withdraw the bougie, a good view of the gut can be had for six inches. The bougie acts as a guide for the speculum, and enables it to be introduced beyond the sphincter. However, a set of Cook's tubular rectum speculums can be procured from William Armstrong & Co., Indianapolis, for a small price.]

Having inserted a tubular speculum to the extent of six inches, and withdrawing the guide, it could be easily seen that the upper portion of the rectum was in an inflammatory state. Situated dorsally was a well-defined but small ulcer, very sensitive to the touch. I coated this ulcer with *lunar caustic* and withdrew the speculum. I had this patient go to bed, assume the recumbent position, and partake of a liquid diet only. On the third day I examined the bowel again, and made an application to the inflamed surface of one part of *campho-phenique* to twenty parts of water. Allowing her to rest for two days, I had the nurse to begin an injection of *sweet-almond oil*, one ounce; *iodoform*, five grains; *subnitrate of bismuth*, twenty grains—this amount to be thrown into the bowel through the longer tube of a Davidson syringe, the patient being on the left side, with the pelvis elevated.

In two weeks' time she was materially improved, and at the expiration of one month went home cured.

Case XII.—A lady, about forty years of age, was sent to me by the late Dr. E. D. Foree for an examination. She gave a remarkable history. She said that five years before she weighed one hundred and sixty pounds; that in the five years she had lost sixty pounds, weighing at the time she consulted me only one hundred pounds. That she had been a constant sufferer all that time, and had been frequently under treatment for womb disease. She was at this time a dyspeptic in so far that she thought that an ordinary diet disagreed with her; but she attributed her loss of flesh more to the pain that she suffered than to any lack of food. She said she was constipated all the time, but, upon questioning her closely, I found that it was the dread of pain, which occurred every time the bowels moved, that prevented her from going regularly to stool. She hesitated about submitting to an examination, but said that her physician had advised her to do so, and she had at last consented. Externally there was nothing around the anus to indicate any trouble. She did not give a history of any discharge from the rectum at all. I attempted to open the anus for inspection, when she began to cry, saying that it would kill her to have an examination. I of course assured her that it would not, and proceeded. Even with the sphincter pushed down by a straining effort, I still could not detect any fissure or ulcer. Anointing my finger and gradually pressing toward the perinæum, I at last had it introduced through the spasmodic, irritable muscle. When I turned my finger dorsally I felt a small, depressed, and very sensitive spot, and the touch caused her the most excruciating pain. Above this I could feel no disease. After the examination I assured her that she could be easily cured. She could scarcely believe this, but said that she would consult her physician and would let me know. In a few days Dr. Foree came to my office and remarked that the strange part of the case was that he had treated that woman for several years, and had her then under treatment for womb disease,

and that she had never referred in any way to this rectal complication until the morning that he advised her to come to me, and that then it was purely an accident that he discovered its existence. In his effort to introduce a vaginal speculum he had pressed more than usual upon the septum, when she cried out with pain, and he had asked her what caused it. She replied that she had had trouble there for a number of years. When he asked her why she had never mentioned it to him, she replied that, in order for him to find out what the trouble was, he would have had to make an examination, and that her modesty forbade it. The doctor remarked that it was so ridiculous, after having treated her a number of times for uterine trouble, that he would scarcely have believed it if it had not occurred in his own practice. It was under this distinguished physician's observation that a patient had been treated for uterine trouble by him for a long time, when she incidentally mentioned one day that she had a bad case of piles, and when he asked her why she had never told him of it, she replied that she did not think that he was a pile doctor. Of course the existence of the hæmorrhoidal tumors played a great part in keeping up the distress in the uterus. The operation of divulsing the sphincter was practiced upon the woman suffering from the irritable ulcer and she was at once relieved of the terrific pain with which she had suffered for five years.

It is singular that an ulcer could exist for so long a time as it did in this case, and not extend to any greater degree than it did, and I can only account for the fact by noting that it was a small ulcer with a hard base and indurated borders, the inflammatory deposit being sufficient to prevent any extension of the ulceration.

Case XIII.—A man, aged about thirty, by occupation a street-car driver, came to me complaining of pain at the act of defecation, but more especially for the reason that he had had an excessive diarrhœa for twelve months that could not be controlled by medicine, and that it so interfered with his occupation that he was forced to give up his job. My opin-

ion was, while he was stating his case, that his diarrhœa had caused some abrasion or perhaps ulceration near the sphincter, and was therefore a secondary consideration. I examined his rectum, and found dorsally situated, just between the two sphincter muscles, scarcely embracing the fibers of either, a well-defined but small ulcer. It did not appear to be very sensitive to the touch, nor did it present any of the characteristic symptoms of an irritable ulcer. I still was at a loss to know whether the diarrhœa caused the ulcer or the ulcer caused the diarrhœa. I told him that if he could submit to a little pain I thought I could cure him. I took a bivalve speculum and introduced it into the rectum, when the ulcer was brought plainly to view. Then with a scoop I scraped the ulcer very thoroughly, and he gave no evidence of very great pain from what I did. He came back to me on the third or fourth day saying that he had more pain than when he first consulted me, but a less number of actions within the twenty-four hours. I again brought the ulcer into view, and made an application to it of pure carbolic acid, after which I deposited vaseline on the surface I prescribed the following as an injection :

℞ Hydrate chloral..... gr. xx ;
Powdered opium..... gr. j ;
Aquæ dest..... ℥j.

To be thrown into the rectum each night at bed-time.

After one week's treatment with this preparation his diarrhœa ceased, and I substituted an injection of oil and bismuth, to be used each day until all sensitiveness had disappeared. He was permanently relieved.

Of course it can be seen that this man's diarrhœa was caused by the existence of an ulcer in the rectum, and yet this ulcer was not an irritable one, but it was located just at the spot where it could excite nerve irritation, to produce a peristaltic action of the bowel which kept up a teasing diarrhœa.

I have had occasion very often to speak of the part that the sphincter muscle plays in rectal disease, and by its spas-

modic action to be responsible for both diarrhœa and constipation, but, as I have fully alluded to this subject in the chapter on the Hysterical Rectum, I can only incidentally refer to it here.

Six or seven years ago I reported to the Kentucky State Medical Society a case of epilepsy relieved by an operation for internal hæmorrhoids. Since that time I have recorded four other cases of epilepsy cured by an operation upon the rectum — one a case of simple ulceration, the three others where the operation was done for fissura ani.

Case XIV.—A physician in an adjoining State brought a lady patient to me whom he said was an epileptic, and that she also suffered with a severe pain in the rectum. He had known for a number of years that she had these "swooning" spells, and, after seeing her in one, had pronounced it epilepsy. The woman was about thirty-five years of age and in good flesh. Her appetite was good and the secretions active. Her family history revealed no epilepsy. Her physician had ascertained the fact that her attacks had some relation to the condition of the bowels; that when her bowels acted, and the actions were soft, they did not appear to influence the attacks; but whenever she was constipated and passed a hard action, she was certain to have an epileptic spasm. The patient stated to us that she had more or less pain in the rectum all the time, but that it was aggravated in the manner described by the physician. I examined her rectum in the presence of her doctor, and found that the sphincter muscle was hypertrophied and very irritable. No distinct ulceration existed. I suggested that she be chloroformed and the sphincter forcibly divulsed. This was done, and the woman kept under observation at the infirmary for several weeks. During this time she did not have any epileptic convulsions, nor did they ever appear again.

Another case somewhat similar to this was the following:

Case XV.—A lady, aged about twenty-eight, was referred to me by one of our local physicians. The doctor stated in his note that she suffered from constipation, and that she had

on an average one or two swooning spells a week, but that he ascertained the fact that they invariably occurred in the water-closet during the act of defecation. Frequently on the street she would experience a feeling as if she would lose consciousness, but never had except under the circumstances mentioned. An examination per rectum caused her some pain, and I desisted from a further exploration because she said that she believed she would faint. I advised her physician to try the divulsion plan upon her, which he had me do several days later. This patient was watched for a number of months and had no recurrence of her epilepsy.

I have recited this number of cases and variety of patients with the treatment in order to show what powerful reflexes can occur from the rectum. I have also tried to be explicit, in narrating the symptoms and stating the disease, to demonstrate more fully my views upon the subject of the so-called "hysterical or nervous rectum" *vs.* a diseased condition in the rectum. I believe that all the symptoms which follow in the train of either one of the affections are due to a pathological change. It is a subject that has not been brought as prominently before the profession as it should have been and that its importance demands. I have aimed in this chapter to give a recitation of facts, substantiated by a report of cases occurring in my own practice, and tried at the same time to explain the condition from an anatomical standpoint.

There is practiced in this country, by a certain class of physicians, what is known as the "American operation." It consists in the entire removal of about two inches of the lower rectum, and is advised in all cases of suppressed reflex action from the rectum. The operation is but a modification of Whitehead's. It is based upon a false premise, is often followed by serious consequences, and, being theoretically wrong, should be condemned. *Where no disease exists in the rectum, no operation is justifiable upon the parts.*

CHAPTER XIV.

ULCERATION OF THE RECTUM.

Simple ulceration of the rectum, located above the sphincter muscles, is a very uncommon disease. I have already taken occasion to state that, in my opinion, some of the causes of stricture of the rectum, as given by the writers on this subject, are not only infrequent but really are no causes at all. Prominent among these I mention dysentery. If we are to accept the dictum that dysentery is a common cause for stricture or even ulceration in the rectum, how can we accept the declaration of Allingham, Ball, and others, that a benign ulceration of the rectum is a very uncommon disease? As I have already stated, dysentery is a very common affection in nearly all climates, especially the warmer ones; and I should imagine that if it produced stricture at all, we would be frequently called upon to treat at least the ulceration that was the precursor of it. My observation has been that the sequelæ of dysentery are not to be found in the rectum, but more especially in the colon. It is a notable fact that an ulceration, very extensive in character, may exist in the rectum located above the sphincter muscles and cause very little disturbance, or at least the disturbance is out of all proportion in its insignificance to the extent of the ulceration. It is only where the external sphincter muscle is implicated in the disease that we have the great distress following.

Case.—Miss M. L., aged twenty-one, was sent to my office by her physician for some rectal disturbance. She gave a history of diarrhœa, or, more properly speaking, a dysenteric discharge. Her general health at this time was very good,

and she complained most of the general sense of uneasiness in the rectum and back, abdomen, etc., and did not speak of any particular pain. Placing her on the table and introducing my finger, I detected an ulcerated surface that embraced the full circumference of the bowel and extended upward nearly as far as my finger could reach. I could detect no effort of constriction of the gut. The entire mucous membrane was denuded, but the sphincter muscle was not infringed upon. Consequently I was surprised to see this girl in as good physical condition as she was, and to hear her complain so little of distress, pain, etc. I could not trace a history of syphilis, and I was satisfied that it was not malignant; consequently I was at a loss to understand the cause for such trouble. The patient had never had dysentery, nor was she of a scrofulous or tuberculous diathesis. Consequently, had I believed in such causes of the trouble, I could not have traced them here. I put this girl under the following directions and treatment: She was ordered to take a small dose of the sulphate of magnesia, often repeated, until a free purgation occurred, and then to wash out the rectum freely with very hot water. When I called, these directions had been complied with. I placed her in Sims's position upon a hard bed, and introduced a speculum, and, opening it, I could see the bowel to nearly the full extent of the ulceration. I then applied freely a solution of the nitrate of silver, forty grains to the ounce, to the entire denuded surface. It is remarkable of what strength caustics, etc., can be used in the rectum. I have frequently used pure carbolic acid to these ulcerations, and the patient complained of no pain at all unless it was allowed to trickle down over the surface of the anus. The true skin surrounding this outlet is very susceptible to the action of such drugs, but the mucous membrane of the rectum will bear it to most any degree. This girl was put upon a milk diet, which included soups and some other liquids, and ordered to remain in bed. Upon my second visit and examination, I found the surface of the ulceration very much reddened—consequently, to my

mind, much healthier. I then soaked into the ulceration a mixture of sweet oil and iodoform, one to ten parts, and withdrew the speculum. After this I had her syringed daily with the preparation that follows:

℞ Olive oil..... Oj;
Aristol..... 3iij;
Hydrate chloral..... 3j.

M. Inject one ounce, after shaking the mixture well, twice a day.

By a long course of treatment this ulceration gradually healed, and the patient was restored to health.

I am satisfied, in dealing with cases of this kind, that a point of the greatest moment is to confine them to bed, for unless this is done it is very nearly impossible to cure them. A second point is to give the bowel a rest in not allowing any hard fæces to pass over it. I wish to observe here that the purgation of one day will not generally suffice to empty the intestinal tract, for it will be observed that three or four times at least, after you have begun treatment, a considerable amount of fæces will pass in response to the aperients given. It is not my custom to confine the bowel long in treating this character of ulceration, but I cause an evacuation at least every second or third day by an enema or by an aperient.

Varieties.—It is very natural to suppose that the rectum could be ulcerated because of its peculiar office. I have given reasons for supposing that it is not the receptacle for the fæces except temporarily; but the physiology of defecation proves that it is the receptacle at least for a part of the dried portion of the fæcal mass. This condition, of course, excites a friction, or, we might say, a continual irritation of the mucous membrane of the bowel, which has a very large blood-supply. Verneuil has drawn attention to the fact that the pressure that the veins of the rectum of necessity must be subjected to during the act of defecation is a fertile cause of hæmorrhoids and congestion. Whereas I do not hold to his view—that the hæmorrhoidal veins penetrate small openings in the muscular coat and are unprotected by any ten-

dinous ring—I do believe that because these veins are destitute of valves is a sufficient reason for the poor circulation in returning the blood. Therefore if the fæcal mass be retained in the rectum, the pressure tends to produce stasis in the small terminal branches. The same thing can be said concerning any pressure that is exerted upon them, as, for instance, a displaced womb or tumors, or perhaps tight lacing, etc. In persons suffering from a diseased condition of the liver, as is often witnessed in the drinking man, this predisposition to a congestion of the veins of the rectum is made manifest through the portal circulation. If observed in time, a congested condition of the vessels can be relieved by proper advice or treatment. If it is allowed to go on, the pathological changes take place in the walls of the blood-vessels, especially the veins which constitute or go to make up the phenomena of inflammation; and yet I am satisfied that it is not at all necessary or to be concluded that proctitis results in consequence, for the disease seems to be confined to the blood-vessels, and very seldom extends to the subjacent tissues or the mucous membrane. The condition in the rectum, under these circumstances, is very similar to that constituting varices generally, and which is observed especially in the veins of the leg, supervening upon pregnancy. Now, we very well know that it is our custom to say to the pregnant woman who is disturbed by the small hæmorrhoid which everts from the anus with the least exertion, that she need not be disturbed by this, because, when the delivery of the child takes place, the hæmorrhoid is likely to disappear. This is a case of cause and effect. So it is with varicose veins anywhere. I have often thought that if the importance of keeping the intestinal tract clear of any accumulation could be taught to common people at least, the number of cases of hæmorrhoids would be greatly reduced. Preventive treatment is certainly better than operative, and yet very few people are instructed how to *prevent* hæmorrhoids and other rectal affections, under which this class of ulceration which we are now considering falls.

It is singular to observe how quickly inflammation of the mucous membrane of the rectum is followed by ulceration, and how infrequent it is to observe ulceration as the result of the congestion or varicose condition of the vessels in the rectum. This can only be accounted for by the fact that the vein walls are thickened by the process of inflammation and become less yielding, instead of the reverse. It can not be denied that some special diatheses are attended with ulcerations at different localities of the body. Now, under this head we must of necessity classify tubercular, scrofulous (?), and those due to syphilis.

We have all witnessed the deposit of tubercle in the glands surrounding the neck of the ill-nourished child, and especially those of the negro race, and the consequent ulceration of the same. Now, it is a conceded fact, since tubercle is better understood than formerly, that this disintegration and degeneration of tissue can take place in and around the rectum, as in any other portion of the body. I have taken the position in a former chapter that I did not believe that tubercle was the cause of stricture of the rectum, as supposed by some, from the fact that this peculiar deposit so quickly breaks down that, before it has filled the rectum to such a degree as to constitute a stricture, it will have softened and given way. I know that different authors have recorded cases of supposed tubercular stricture of the rectum, and yet I am inclined to think that a close investigation would perhaps have changed the diagnosis. Whereas I do not believe in tubercular stricture, I regard tubercular ulceration of the rectum as one of the common causes of this condition, and, unfortunately, this character of ulceration is the most difficult of all in which to set up the reparative process. Indeed, it will be found that, unless the general constitutional condition can be improved, the healing process can not be established in the ulceration, and therefore sometimes we are forced to resort to measures only looking to the relief from pain, etc., and direct that the patient seek such climate, indulge in such outdoor exercise, live upon good nutritious food, attend carefully to the

secretions of the body, including bathing, massage, a pleasant occupation, a freedom from mental distress, tonics, stimulants, etc., as will tend to accomplish this purpose. Among the very first symptoms or conditions with which we meet in tubercular ulceration of the anus or the rectum is the actual breaking down and softening of the structures. This has been designated by some as a cold abscess.

Case.—A young lady came to me by the instruction of her family physician, who sent a note by her to explain her condition. In this communication he told me that this girl had lost two sisters and her mother with consumption, and that she had a deposit of tubercle in one lung. She told me that she frequently had night-sweats, had lost quite a good deal of flesh, had very little appetite, and was despondent. When asked to give symptoms for which she consulted me, she said that she felt an uneasiness in the neighborhood surrounding the rectum; that there was no acute pain, but that when she sat down it disturbed her, and that she was unable to take much exercise. I put her on the table and inspected the parts. There was a puffy condition to the left side, extending as far backward as the coccyx. Fluid could be easily detected under the skin, and yet when an even pressure was made with my hand it seemed to relieve her instead of aggravating her symptoms. The mucous membrane of the rectum was not ulcerated, but the fluid was evidently just under it, for it was very much thinned. My first impression was, which I carried out, to give free vent to the contents of this cavity. I had her go to an infirmary, and upon the next day I freely incised from the outside, thus hoping to save the mucous membrane and prevent an internal opening. The contents evacuated were of a bloody, watery appearance, filled with the *débris* of tubercular tissue. Although this cavity was carefully washed out daily with an antiseptic solution, I was satisfied that it would not heal, but, on the contrary, the degeneration of tissue began to extend. I was placed here between two fires. If I operated on this girl I would be compelled to cut away a good deal of

tissue, knowing at the same time it would be difficult to get the wound to heal; and, on the other side, if I did not operate, the destruction would rapidly progress. I hesitated, too, about putting her in bed, believing that confinement would make her general condition worse. Again, it must be observed that the succussion in the phthisical patient caused by coughing is very detrimental to the healing process. I determined, however, to accept that which I considered the least of two evils, and to operate. This I did on the fourth or fifth day after seeing her. She took ether kindly, and I laid open the cavity to its full extent, running parallel with the bowel, and, on introducing my finger into the rectum could detect that the mucous membrane had given way and a large internal opening presented. I ran my grooved director into the rectum through this opening and divided the tissues. There was much overlapping skin, which I lifted up and carefully trimmed off with my scissors to the furthest edges of the wound. Even then some loculi were observed, which I broke up with my finger and trimmed the skin from over that section. In other words, I did not leave any pocket whatever; I left the bottom of the wound fully and wholly uncovered. When I was through I had made quite a large wound. I was afraid to dust it with iodoform, so I contented myself with laying iodoform gauze over it. Surgeon's cotton was then placed in position and a T-bandage applied. She rallied nicely from the ether, and neither then nor at any other time complained of any pain from the operation. On the second day she expressed a desire to get up and walk around the room, which I permitted. Indeed, I advised her to remain up each day as long as she desired. I looked after the wound carefully and put her upon a constructive treatment, and, strange to say, though it took a longer time than usual, this wound entirely healed, and after it did so the girl's general health very much improved.

There is another form of ulceration in the tubercular subject that attacks the mucous membrane and tissues within the rectum, showing no evidences on the outside, and I have

seen a number of cases where much confusion arose as to how to classify the ulcer, from the fact that otherwise the patient appeared to be free from tuberculosis. The following case will illustrate this condition.

Case.—A few months ago one of the business men of this city, aged about forty, came to consult me about his rectum. He said that he was discharging some mucus each day, accompanied by a good deal of tenesmus, but complained of no particular pain. I examined his rectum and found one distinct ulcer, beginning just above the sphincter muscle and extending upward. It was not oval, but more of a conical shape, the base of the cone being below. It had the peculiar characteristics of a tubercular ulcer, although a broken surface; there was no pus. The base was a glairy, palish red. No particular pain was noticed when I touched it. There were no well-defined edges, and yet the ulcer had some depth. He had given me his general history, but upon getting off the table he informed me that for a couple of years he had been traveling in order to keep him in a climate that would cure a lung trouble said by his physician to exist. During this time he had been much in France and Egypt, latterly in North Carolina, and had been pronounced by his physician as cured of his lung trouble. He had no longer any cough, expectoration, night-sweats, or indeed any symptom which pointed to phthisis. He had a good appetite, had gained flesh, and expressed himself that, as far as his lung disease was concerned, he was a well man, and to all appearances he was so. I said to him that I believed he had a tubercular ulcer in his bowel, for which I prescribed by first making a local application to the ulceration and afterward advising an injection to be used by himself. In a few weeks he told me that he was compelled to go East on some business, and asked me to refer him to some good authority that he might be re-examined for his lung disease. I did so, and while gone he consulted a very distinguished diagnostician. I should say here that, during one of my talks with him, I advised him to leave this country, at least for the winter,

and I thought a trip across the ocean and a stay in the south of France would benefit him. The authority to whom I referred him told him that he still had trouble in one lung, and quite agreed with me that he should go abroad. The patient made known to this consultant that he had some rectal trouble, and I had so mentioned in my note to the doctor, and having understood the patient to say that he would not return to Louisville for a year or more, he advised him to have a surgeon in Philadelphia examine his rectum. He did so, and the surgeon advised that this ulcer should be scraped out. He was put under ether, and by the use of a scoop, together with a thermo-cautery, the operation was done. He was confined to the hospital for several weeks and then returned home.

In referring to the first case reported here, it might be said that I did an operation with the knife upon a tuberculous condition of the rectum and anus, but it will be quickly seen how very different the two conditions were. In the first case there was a cavity filled with an ugly fluid and simply covered by a layer of skin in a necrosed condition and endangering the mucous membrane of the bowel. The gist of the operation was to cut away all this offending skin, discharge the contents of the cavity, allow free drainage, which left at the bottom an indolent, tubercular ulceration, and the treatment of that ulceration, or the wound, if you please, was by the same manner that I suggested for the ulceration inside the man's bowel, reported in the second case—viz., attention to the general health of the man and a gentle stimulating treatment of the ulcer. Mollière propounds the question whether, if a tubercular ulcer be completely extirpated or destroyed before general symptoms of tuberculosis had shown themselves, it might not be possible to prevent the general manifestations of the disease. Now, this is a very nice point to raise, but I am inclined to believe that the extirpation or the destroying of the ulcer would not prevent the general manifestation of the disease; but in this last case, which I have just reported, it will be observed that tubercu-

lar disease had existed in this man's lungs for several years. Even admitting that it was cured at the time I saw him, at which time a tubercular ulcer existed in the rectum, the case does not fall under the class described by Mollière. So I must say that I believe that for such ulceration as I have described of a tubercular origin, operations looking to its extirpation or its destruction should not be practiced if general tuberculosis exists.

Scrofula.—Scrofula is such a vague term, and conveys such little meaning, that I am not inclined to put it down as a special class of ulceration. For very many years the scrofulous taint has been believed by some of the very best authorities to be a synonym with the syphilitic diathesis. I am more inclined to class this form of trouble, especially of ulceration, under the head of those just named—viz., tubercular. The distinction is so fine that, even to admit the premise of authors who make this classification, it aids us very little in the treatment, because a so-called scrofulous ulceration would be treated exactly similar to a tubercular ulceration. If we find such ulceration in the young, I would be inclined to believe with Van Buren that it was caused by the grafting of the syphilitic poison upon the scrofulous diathesis.

Kelsey says that this form of ulceration is best treated by destructive cauterization and *raclage*. I can not believe that this is a good plan, but am more inclined to believe that by watching the local trouble for any complication that might arise, and placing the patient upon the same general character of treatment that we do the tuberculous, we would run just as good a chance of a final cure. In the chapter on stricture of the rectum I have maintained that syphilis is the most common cause for it, hence I believe that it is also the most common cause for ulceration of the rectum. I shall refer here more especially to the secondary manifestation of the disease, or tertiary syphilis. I shall not take the time to deal again with the manner in which I believe this ulceration occurs, but make it suffice to say that it is

of gummatous origin. I have also stated the way in which this ulceration can be diagnosticated from other forms of ulceration; therefore it devolves, in this chapter, only to speak of the treatment after you have made out the diagnosis. I firmly believe that where syphilitic ulceration of the rectum has produced sufficient change to amount to a stricture of the gut, this stricture, being of a fibrous nature, is incurable. I do not believe that by any antisyphilitic medication this fibrous structure can be reabsorbed. So firm am I in this belief that whenever I see a person suffering with a rectum filled with gummatous deposit, with a coincident stricture or strictures, I pronounce it as incurable as cancer. But if we see a patient sufficiently early to detect the syphilitic ulceration in the bowel, then the prognosis is much more favorable. The treatment of this form of ulceration is very much like that of the tubercular ulcer, for the ulceration is generally indolent in its character. But we must not be impressed with the idea that its characteristics are the same as those of either simple or tubercular ulceration. The pathology is entirely different. Simple ulceration arises from trauma, a lesion being produced in some manner. Tubercular ulceration is a breaking down of tissue, and is due to the tubercular bacillus. Syphilitic ulceration is a secondary condition, is a morbid deposit which takes place in the tissues underneath the mucous membrane, and, by its gradual growth, is subjected to friction by the passage of fæces, etc., and then has its surface ulcerated. But this ulceration does not cause any particular destruction to the morbid deposit, for the building process of the same still goes on. In simple ulceration we are to rely upon simple local measures; in tubercular ulceration we place the greatest stress upon the attention to the general health; in syphilitic ulceration we are to fight the special diathesis by antisyphilitic medication, and generally it will be found a very hard fight indeed. Therefore the treatment must be as the treatment for secondary and tertiary syphilis usually is. The two agents to be relied on are mercury, in some one of its varied

forms, and the iodide of potassium. These patients are much benefited by a sojourn at Hot Springs, Arkansas. While there, they are enabled to take a much larger amount of these agents than when at home. I believe that an explanation for this can be found in the sweating process that they are made to undergo in taking the hot baths. The ulceration in the rectum should be looked after in this manner: By using a good speculum, the entire surface should be brushed a number of times with a solution of bichloride of mercury (1 to 3,000). If at any one point the ulcer is especially indolent, I frequently apply pure carbolic acid. As a cleansing agent, the peroxide of hydrogen is the best. As a stimulating injection, nitrate of silver, campho-phenique, carbolic acid, and fluid hydrastis in solution, are admirable agents. The bowel should be kept in a soluble condition and the secretions looked after. It is often a question with physicians what amount of iodide of potassium should be given a syphilitic patient. I think each case should be considered an individual one and allowed to tell its own story. This is the remedy, above all remedies, that is given for its effect. I am in the habit of prescribing, as a beginning, ten drops of the saturated solution in a half-glass of water three times a day, and increasing from two to five drops each day until, if the case seems to demand it, I reach as much as fifty drops at a dose, or one hundred and fifty grains per day, to be taken indefinitely and its effects carefully watched. It should always be seen that it is fully diluted with water. Sometimes you will see a patient who has an idiosyncrasy to the drug, and its effect may be manifested by the taking of a few grains. Of course, in these cases, the physician is to determine what is best to be done. I am satisfied that I have seen quite a number of ulcerations of the rectum get well under this kind of treatment. It should not be forgotten that, along with the mercurial and iodide treatment, these patients need a good tonic course as well. Some one of the good tonics should be given. One of the best is the elixir of iron, quinine, and strychnine.

For the anæmia which frequently follows antisyphilitic treatment or the disease itself, or for the same condition produced by struma, tuberculosis, etc., a most admirable preparation will be found in the Elixir of the Three Chlorides with Calisaya prepared by Renz & Henry, of this city. Each fluidrachm contains an eighth of a grain of protochloride of iron, $\frac{1}{128}$ grain of bichloride of mercury, and $\frac{1}{280}$ grain of chloride of arsenic. I have derived much benefit from treating this class of patients with this preparation. Indeed, it is wonderful to see the rapid improvement in all enfeebled natures, especially the syphilitic, after taking the three chlorides.

Under this classification of ulcers of the rectum, but more especially of the anus, I wish to speak of chancroids. They are said by Pean and Malassez to have constituted nearly one half of all the ulcerations in this region examined at the Lourcine in 1868. I can not understand how it is that, if this statement is correct, we in America have seen so few cases.

I am sure that I never saw a stricture of the rectum produced by chancroidal pus, and I can not remember to have ever seen an ulcer on the mucous membrane of the rectum caused in this manner. We do tolerably often see condylomata around the anus, and such a condition is very ugly, and may be so extensive as to often lead the physician to suspect that he is dealing with a more serious condition than exists. But we must remember that all condylomata are not syphilitic. This condition is recognized by the elevation above the cuticle, in a well-defined grouping, of what appear to be small, nodular tumors, with an ulcerated surface, discharging pus. But of all forms of ulceration around the anus, or in the rectum, this is the most amenable to treatment. Absolute cleanliness of the parts should be brought about by hot water and Castile soap, then drying off and applying the following:

℞ Bismuth. subnitratis..... ʒss.;
Hydrarg. chlor. mit..... ʒiij.
M. Sig.: Dust on the parts.

Under this treatment this condylomatous mass frequently disappears as if by magic. If the ulcerations appear to be at all indolent, I have found it best to irrigate them with a solution of bichloride of mercury (1 to 3,000).

Dysentery.—I have taken the position, in the chapter on stricture, that I did not believe that dysentery was a common cause of stricture, as is stated by some. In giving my reasons I stated that an ideal case for a pension would be where a soldier should show a stricture of the rectum resulting from dysentery contracted during a war, and incidentally remarked that the Pension Office was singularly quiet on that point. I have just noticed that in the Medical History of the War of the Rebellion Dr. Woodward remarks that stricture resulting from dysenteric ulceration seems to have been much rarer than might have been supposed, and that no case has been reported at the Surgeon-General's Office, either during the war or since; that the Army Medical Museum does not contain a single specimen; nor has he found in the American medical journals any case substantiated by post-mortem examination in which this condition is reported to have followed a flux contracted during the civil war. It is only since taking up this chapter that I have seen this statement from Dr. Woodward, and I am glad to see that it substantiates so fully the opinion that I have expressed. Dysenteric *ulceration* of the rectum, however, is sometimes seen, although not as often as one would suppose. We more frequently have colitis existing as the result of dysentery than proctitis, and I believe the sigmoid flexure is affected oftener in this manner than the rectum. These ulcers appear isolated and are very seldom grouped. I believe that their origin occurs by the peeling off of the epithelium, and the friction to which they are afterward subjected by the fæces or straining, or both, tends also to implicate the mucous membrane. If the dysenteric patient could be watched and have his rectum irrigated after his attack, I dare say that the number of cases of dysenteric ulceration, although already few, would be diminished.

Treatment.—If it is supposed that the ulceration is the result of dysentery, the same treatment would obtain as prescribed for simple ulceration from other causes—viz., an absolute rest given the bowel by first causing a free evacuation in order to clear out the intestinal tract, rest in bed, and soothing applications locally applied. In such a case I would use frequent injections of very hot water, not only for the purpose of cleansing the mucous membrane, but for its stimulating property as well. If an ulcer is defined and evinces an indolent disposition, one of the best local applications is pure carbolic acid. In making this application it is well to guard the surrounding mucous membrane by seeing that the cotton on the probe is not over-supplied with acid, and also to use an application of vaseline around the contiguous parts after the application. As a subsequent local application, I am in the habit of using iodoform for ulcers of the rectum by distending the sphincter muscles with a speculum and blowing the powder by means of an insufflator upon the diseased membrane. As an injection, a preparation of iodoform or aristol, one drachm to eight ounces of olive oil, one ounce to be injected each night at bed-time by the patient. By absolute rest, and under this treatment, such ulcers would be very likely to heal. I very seldom inject opium for ulceration of the bowel. It is very true that, of all agents, it is the quickest to quiet pain and distress, but it establishes a habit which is hard to overcome. In ulcerations of the rectum which have existed for any length of time and show a well-defined, hardened base with indurated borders, it is a good plan to scarify them, and especially to see that the knife goes through the edges of the ulcers. This should be done before any special treatment is begun.

Ulceration from Foreign Bodies.—Of course it is an admitted fact that traumatism, the result of the introduction of foreign bodies into the rectum, may be followed by ulceration, and yet this should be classed under the head of simple ulceration and treated as such. It is remarkable the number of foreign bodies and the character of some that are some-

times found in the rectum. In many cases the patient will absolutely deny that any effort has been made to introduce the foreign body into the rectum, and yet, upon investigation, such may be found, and, unless removed, might result fatally; to the contrary, the surgeon might be led into error by the statement of patients as to the swallowing of foreign bodies or substances.

Case.—A short time ago a young gentleman came to my office in very great distress of mind. In giving me a history of his disturbed condition, he said that he had the day before swallowed his upper set of teeth, including the plate. I asked him to tell me how this was done, and he replied that while eating raw oysters at a restaurant it must have occurred, from the fact that, as he was leaving the place, he detected that the plate containing his teeth was not in his mouth. Upon further questioning, I ascertained the fact that before going to the restaurant he had placed postage stamps upon a number of letters, and that to moisten the stamps he would insert a number that were attached into his mouth against this upper plate. I suggested to him that possibly the suction and the gum arabic upon the stamps had been the means of drawing the plate from his mouth without his knowledge. In questioning him for symptoms of any foreign body in the intestinal tract or stomach, he placed his hand over the region of the sigmoid flexure and said he felt pain there. It was a question in my mind whether so large a body could pass the ilio-cæcal valve. It was my own opinion that if he had swallowed the body it was still in the stomach, and possibly gastrotomy would have to be done. I asked him, however, to dismiss the subject from his mind by trying to persuade himself that he had not swallowed the plate, and come to see me the next day. He failed to report, and, as there were no further developments, I suppose that it was a fact that the source of his trouble was in his mind and not in his stomach.

As I have intimated, foreign bodies are often introduced into the rectum with malice or by intention, and, if of such a

size as would admit of it, will find their way upward into the colon. Such bodies may include pieces of wood, lead or slate pencils, stones, pieces of coin, sticks, pieces of bottles, or whole bottles. Velpeau reported the detection of the bottom of a long Cologne-water bottle felt beneath the false ribs on the right side, where he was enabled to touch the open end of the bottle, which was a little over eleven inches long, with the finger in the rectum. It was safely extracted, and left no bad consequences. The late Valentine Mott reported a case where a paving stone had been thrust through the anus by malice on the part of a sober companion on his drunken friend. In another case, under similar circumstances, a tumbler had been inserted into the rectum. A late writer in one of the foreign journals reports the extraction of a large goblet which had been thrust into the rectum, and a laparotomy was done for its removal. It can be easily understood what the danger to life is under such circumstances. M. Gerard made a report of thirty-four cases, the fourth of which terminated fatally. If the patient escapes peritonitis, we may have—excited by the presence of the foreign body—inflammation of the rectum, gangrene, abscess, fistula, false passages, etc. It must be understood that the removal of large foreign bodies, especially those of glass, is attended with much danger. In one of Velpeau's cases, in trying to remove a beer glass, it was broken, and serious laceration of the gut took place. The man died in eight days from abscess of the pelvis. As far as a diagnosis is concerned, it is generally made plain by introducing the finger into the rectum, when the foreign body can be found, unless it has been small enough to pass up into the colon.

The method to be practiced for the removal of these foreign bodies must be made to suit the case. Generally it will be sufficient to anæsthetize the patient and divulse the sphincter muscle freely, and then, by the aid of the fingers or forceps, to extract it. It is very well after the sphincters are dilated to pour into the rectum an ounce or two of oil, which lubricates the parts and aids us materially in the effort.

If it is found after the divulsion of the sphincters that the space is not large enough to admit the removal of the body, Esmarch has advised that a free division be made in the median line, back to the coccyx. If it is found that the foreign body is held higher up, and yet can be detected by the finger, the whole hand should be introduced into the rectum in order to obtain a good hold upon the foreign body. It has already been stated in a former chapter that the size of the hand should be considered, and, if necessary, to procure the aid of some person having a small hand, and yet it requires that the manœuvre thould be executed slowly and with gentleness. If all these efforts fail, a laparotomy should be done. A number of such cases are reported.

The ulceration that results from foreign bodies remaining in the rectum should, as I have already said, be treated in the same manner as simple ulcerations arising from other causes.

CHAPTER XV.

NON-MALIGNANT STRICTURE OF THE RECTUM.

In discussing the subject of non-malignant stricture of the rectum, I shall take some positions which are contrary to the accepted teachings of the day, but I do so after weighing the matter carefully and taking my experience as my teacher.

Ætiology.—The following classification of the varieties of stricture of the rectum is given by Kelsey. It is the usual one given by most authors:

Congenital.—1. Complete. 2. Partial.

Acquired.—1. Spasm. (*a*) Dysenteric. 2. Pressure from without. (*b*) Tubercular. 3. Non-venereal. (*c*) Inflammatory. (*d*) Traumatic. 4. Venereal. (*a*) Ulceration (either chancroidal, secondary, or tertiary). 5. Cancer. (*b*) Due to unnatural vice. (*c*) Neoplastic (gummata, anorectal syphiloma).

The first great division, it will be noticed, is congenital and acquired stricture. In writing of or dealing with stricture, the idea intended to be conveyed is that of a pathological change in tissues, etc., a deviation from the natural, brought about by disease. Hence I object to the consideration of congenital malformations of the rectum, or to define them under the head of strictures of the gut, for the reason that it is misleading to do so. It will be more to the point to deal with such as atresias. Exception could also be made to the second division of this grand classification—viz., the acquired. I am aware of the fact that the term is often used in the sense herein applied, but to my mind a better classification should be employed. It is very easy to understand how one could acquire a stricture the result of venery, but it is difficult to

understand how one could acquire a spasmodic or cancerous stricture. But I will adopt, for the sake of discussion, the above classification, leaving out the congenital variety.

1. *Spasm.*—To this form of stricture I shall prefer two objections. First, if it be true that such condition ever exists, which I doubt, it should not be classed as stricture at all, for the reason that no pathological change is manifest to constitute a stricture, and no treatment could be given it *per se.* In other words, it would be a symptom of some lesion or trouble outside of the so-called stricture. Second, I believe that, from the anatomical construction of the rectum, it would be utterly impossible for its lumen to be so constricted as to be perceptible as an obstruction by spasmodic contraction of its muscular fibers. I might add as a third reason that in all my examinations of this part of the gut I have never seen a spasmodic contraction that could be called a stricture.

2. *Dysenteric.*—Although it is frequently stated that dysentery is a common cause of stricture of the rectum, I have never seen a case of sufficient worth to convince me of the truth of the statement, or indeed that it was a cause at all. I have many times seen patients who gave a history of having had dysentery, and were treated for a long time for the affection, but a close scrutiny of the case revealed the fact that the so-called dysentery was caused by an already existing stricture and ulceration, the rule here being reversed—that dysentery was the result, not the cause. If dysentery really be a cause of stricture of the rectum, how very often we would expect to meet with it in our practice, considering the great number of people who have dysentery, especially in the warmer climates! Again, practitioners of medicine know that ulceration proper very seldom exists in the rectum during or after attacks of dysentery. The sloughing in these cases occurs from the gut *above* the rectum. I do not deny, but my experience has not taught me, nor am I convinced, that ulceration of the rectum is caused by repeated dysenteries or diarrhœas. I am sure, at least, that the cases are infrequent. If a long-

continued irritation is kept up in the rectum from any cause, the result would be, of course, an inflammatory exudate, resulting, perhaps, in ulceration and stricture; but I must confess that, in searching for this as a cause, the road to a conclusion has not been plain enough for me to put dysentery in the list as a cause at all for *stricture* of the rectum. If this disease is a common cause of stricture, as asserted by so many, it occurs to me that the trouble would be often found in the veterans of war. Indeed, I could not imagine a more ideal case for a pension than the existence of stricture of the rectum the result of a dysentery contracted while in the service, yet the pension records are singularly silent on this point. At a meeting of the Louisville Clinical Society, Professor John A. Ouchterlony, a distinguished pathologist and teacher, in discussing the subject of stricture of the rectum, said: "I call to mind a dead-house experience extending over many years. During the war I made post-mortem examinations upon hundreds of cases who died of dysentery—the most malignant forms of the disease, as all will attest whose observations extend back to war times—and I can not remember to have ever seen a stricture of the rectum as the result of dysentery. In the two hospitals to which I was pathologist there were eleven hundred and fifty beds, and we sometimes made as many as five or six post-mortems a day. After the close of the war I was for many years pathologist to the City Hospital, but in all my dead-house experience I never saw a stricture of the rectum caused by dysentery."

These are the remarks of a very close observer, and my experience certainly coincides with his.

3. *Tubercular.*—It is evident that a tubercular condition is often met with in the mucous membrane and the structures of the rectum, and the lymph follicles of the ileum and large intestines are the organs usually infected when the disease has its origin in the intestinal tract. If *stricture* and ulceration were the terms used, I could make no objection to the classification of tuberculosis as the cause of ulceration. That ulceration frequently results from this diathesis or dyscrasia

no one can doubt, but that the coincident stricture follows, as from other well-known causes, notably syphilis, I can not agree. The disposition of tuberculous tissue everywhere is to break down. Before the capacious rectum is filled with tubercular deposit sufficient to stricture it, it will have broken down from ulceration, etc., and it must be by deposition only that we can conceive of *stricture* from this cause, because cicatrization is so seldom and so feeble in these parts that it would be the rarest accident to find it. In no instance have I ever seen a stricture of the *bronchi* as the result of tuberculosis. There would be just as much reason to expect it there, or indeed more, as in the rectum.

4. *Inflammatory.*—This term is so broad and comprehensive that we must perforce of reason admit it as the cause of stricture of the gut—indeed, as the one grand and common cause—for if stricture exists from trauma, pressure, venery, dysentery, cancer, syphilis, tubercle, ulceration, or what not, it is inevitably due to the processes and products of inflammation. In no other way can a stricture be formed.

It might be argued that a lesion or wound existing in the bowel by the reparative process heals and leaves cicatricial tissue, and that stricture is the result of the cicatrix, and not of plastic infiltration of the tissue proper. In answer, I would say that there could have been no cicatrization if there had been no inflammatory process; hence, inflammation, being the cause of the cicatrix, was in truth the cause of the stricture. It is said that any severe form of proctitis resulting in ulceration may be a cause of stricture. To this proposition I freely assent; but the most difficult part of the whole matter is to tell the cause of the proctitis, which is inflammation. It is not therefore to the proposition that I object, but to the proposed or suggested causes. For instance, in naming several, the following is given by some author as the cause of stricture: "Erosion and ulceration of hæmorrhoidal tumors." Now, in the nature of things, how can this be true? We might understand how the hæmorrhoidal tumor could by friction excite some ulceration of the bowel, or the hæmor-

rhoid itself, being a tumor, could have its own mucous membrane injured and ulcerated. Suppose it does, how can that ulceration produce a stricture of the rectum? As we have intimated, strictures may result from two pathological conditions—first, from a deposition of plasma causing an obstruction; second, by cicatrization causing a stricture. Can either of these conditions result from hæmorrhoidal tumors being ulcerated? I think not. The inflammatory deposit would only involve the tumor, and a cicatrix on top of a pile would not amount to a stricture.

Traumatism.—Under this head the authors include ulceration following operations or the cicatrizing of wounds made around the rectum, and cite the surgical operation done for hæmorrhoids and fistula in ano. In all my practice I have never seen such result follow either operation. I can understand how a cicatrix resulting from the removal of too much skin from this region might cause a stricture of the *anus*. Dr. W. O. Roberts, of Louisville, has told me recently of operating on a patient of this kind, the original operation having been done by an inexperienced hand. I can not understand how a surgeon used to operating in this region would do an operation that would result in a stricture of the rectum. These constrictions that might result at the anus can not properly be called a stricture of the gut; but, as far as the classification goes, traumatic strictures are in fact inflammatory strictures. Inflammation is the result of trauma; so one class might be made to include both. For brevity this would be the best.

Venereal.—"Without admitting too much," says one author, "it may be safely said that, beyond dispute, there are three forms of well-recognized venereal disease in the rectum which may result in stricture. These are chancroidal, secondary, and tertiary ulcerations, either simple, traumatic, or the result of direct inoculation, and an unusual form of tertiary disease, of the general nature of gummatous deposit, variously described by different authors, and by Fournier as ano-rectal syphiloma." This author leads us to infer that

these three venereal causes—viz., chancroidal, secondary, and tertiary ulceration—are the most infrequent way that stricture of the rectum can be produced, and he classifies the form of tertiary disease of the general nature of gummatous deposit as an *unusual* form of stricture. To the proposition that chancroids are responsible for stricture of the rectum I certainly must dissent, and that the gummatous deposit of syphilis is an *unusual* form of stricture of the rectum I can not admit. Allingham reports that out of seventy patients suffering with stricture of the rectum, thirty-five of them had a history of syphilis. I have frequently said that I believed that more than one half of the strictures met with in the rectum were the result of syphilis, and I have also often asserted that in no single instance have I ever seen a stricture of the rectum caused by the healing of a soft sore. I do not believe that it can occur. The same opinion is held, partially at least, by Allingham, James R. Lane, Alfred Cooper, Coulson, Christopher Heath, and others. These three causes are said by many to produce their effect by simple trauma or direct inoculation. In my opinion, it can not result in any such manner, and granting that the soft sore could produce an ulceration that might end in stricture, how, I would ask, can the aforesaid pus get into the rectum? It may have occurred, but even granting that it did, by direct contact, I do not believe that it would result in a stricture. Instead of secondary syphilis, or syphilis of the tertiary form, being an unusual cause of stricture of the rectum, I maintain that it is the usual and only form that we find this disease producing, or causing stricture of the rectum. Ricord, Fournier, Heath, and others believe this, and Mr. Bryant, in his excellent work on the Practice of Surgery, described these ulcerations and strictures of the rectum as "mainly syphilitic," and says: "Foreign authors describe chancroidal disease of the rectum, venereal, but not syphilitic. In this country it is hardly recognized." I certainly agree with this author. I desire, as a point for illustration, to quote a table of cases, numbering seventy, admitted into

St. Bartholomew's Hospital, which gives the probable primary cause of the disorder:

Syphilis	13
Childbirth	8
Operation for piles	8
Operation for fistula	2
Congenital	2
Inflammation of the bowels (peritonitis)	2
Internal fistula	2
Dysentery	2
Tubercular disease	1
Unassigned	30
	70

This table was made from Cripps's notes, when Surgical Registrar at St. Bartholomew's, and he says in reference to it: "It would appear in the above table that eighteen per cent represents as near as possible the proportion of cases of stricture admitted into St. Bartholomew's Hospital which can be fairly assigned to a syphilitic origin."

Now, by a careful study of this table, it can be seen that syphilis is likely to play a greater part than is assigned to it as the cause of stricture of the rectum. In the first place, thirteen of the cases are ascribed to syphilis. The next eight cases are reported as being produced by childbirth. I suppose the gentleman who compiled the table meant to say that *pregnancy* was the cause of the stricture that is set down to childbirth, for I have never yet known a case of stricture of the rectum to result from the latter cause, and it is very doubtful if pregnancy can be set down as even an infrequent cause for stricture of the gut. Very few cases can be traced to this origin; certainly an observation of eight cases out of seventy, giving this as the cause of stricture of the rectum, is incorrect. Of course, too, the patient's testimony was taken in making up the opinion. The next eight cases are attributed to operation for piles. The most charitable construction that can be placed upon this statement is that the

patients were mistaken; otherwise the operation for piles was done by very inexperienced hands, and no such result would have occurred in the practice of Mr. Cripps. The same thing can be said of the next two cases, reported as occurring from the operation for fistula. Two cases are congenital. These of course must be ruled out in forming an idea of what aver-

Non-malignant stricture of the rectum. (Ball.)

age syphilis plays in the seventy cases. As causing the next two, inflammation of the bowels (peritonitis) is set down. This of course is a mistake. Internal fistulæ are responsible for two of the cases of stricture. To say the least, this is a very high proportion to be observed in seventy cases. Dysentery is said to be the cause of the next two cases. As I have already stated, I can not believe that dysentery is a cause of stricture of this kind. I will not argue it here. The next case is said to have had tubercular disease for its origin.

It is fair to presume that there is a reasonable doubt in this case. There are thirty cases unassigned. As I firmly believe that syphilis is accountable for one half the cases of stricture of the rectum, I imagine that one half of these thirty cases could be traced to that cause. Therefore, instead of syphilis being represented by eighteen per cent in this table, I am constrained to believe, if their history could have been known positively, that fully one half of them were caused by syphilis.

I have already stated that I do not hold to the theory of chancroidal ulceration, and consequent stricture, as advocated by Ziegler, Mason, Kelsey, Van Buren, Gosselin, and others. Nor do I subscribe to the belief that the stricture is caused by the contraction of the cicatrix of the healed ulcer. Cripps says: "I rather regard the stricture as due to the permanent atrophy of the circular muscular fibers of the bowel and the posterior border of the levator ani, an atrophy brought about by the prolonged reflex irritation excited by the ulcerated surface."

I am equally opposed to this view of the matter, for the reason that I believe that strictures in the syphilitic subject are the result of a syphilitic neoplasm, which becomes organized into firm tissue. It is a gummatous deposit, and the rectum is a favorite seat. I believe, therefore, that it is this form of syphilis that produces stricture of the rectum oftenest.

Diagnosis.—When the stricture is within four inches of the sphincter muscle it is easily diagnosticated, be it malignant, benign, or syphilitic; the finger will detect it. It is a very different matter, however, to determine its character, and yet to a certain extent the treatment depends upon it. Kelsey says: "There is an old and deeply rooted idea in the minds of the profession that a stricture of the rectum must be either cancerous or syphilitic—an idea founded on error and capable of doing much harm and injustice to innocent people. Again and again I have been able to give great comfort to women suffering from this disease by denying the correctness of this

idea in my own practice. The fact that a stricture is not cancerous adds little weight to the idea that it may be syphilitic."

This is so diametrically opposed to my views and observations that I desire again to say that I believe fully one half of the strictures found in the rectum are due to syphilis. Not venereal in the sense that many would have us believe—namely, by the infection of the rectum by chancrous pus, or by direct contact, but as a secondary deposit, the result of constitutional disease. There are but few authors to-day that deny this fact, but in admitting it they class these cases as exceptional. It is no reflection upon the morals or virtue of the married woman to form a diagnosis of syphilitic stricture of the rectum, and I have had many cases in private practice where the family physician was very loath to believe that my diagnosis of syphilitic stricture was correct, and yet I can call to mind but few of the cases in which this opinion was not verified by the husband, after the importance of the subject had been explained to him. By a late estimate it is said that over five million people in the United States are subjects of constitutional syphilis. If it is admitted that one single case of stricture of the rectum can result from this constitutional disease, it admits the argument. Then, taking into consideration the great number affected with it, is it any wonder that we should have the percentage named as suffering from this manifestation in the rectum? I have long since been forced to believe that the rectum is a favorite seat for syphilis, and, because this is not generally recognized, these cases escape notice. Mr. Allingham, in tabulating his cases of stricture, says: "Thus, out of the total number of ninety-nine patients, fifty-two or more were syphilitic." As a means of diagnosis, the clinical history and observation of the case has much to do with forming a correct opinion. If it is ascertained that the patient has constitutional syphilis, I would consider that it was a strong point gained. I do not wish to be understood as saying that in every case where both syphilis and stricture exist,

the latter was caused by the former, but undoubtedly in the vast majority of cases this is true. Indeed, so firm am I in this belief that if it is a question between cancer or no cancer, and it is decided that it is not malignant, ninety-nine out of every hundred cases will, in my opinion, prove to be syphilitic, for the reason that stricture, the result of benign ulceration, does not resemble in the least stricture from malignant deposition. To the contrary, syphilitic stricture does, to a degree, resemble malignant growths. To be plainer, malignant disease and syphilitic disease invade the rectum as a deposit and infiltration of the submucous tissues, etc. Ulceration here is secondary to the deposit, and is caused by the friction of the passage of fæces, or the breaking down of tissue, the result of the disease. Benign or simple ulceration begins with the damage done to the mucous membrane, and the infiltration is secondary to it, unlike both malignant and specific disease. Besides, a simple stricture is generally annular, and does not consist of a deposit in the submucous tissues. I do not wish to convey the idea that ninety-nine out of every hundred cases of stricture of the rectum are syphilitic by any means, and I have been thus explicit because I have been quoted wrong in this matter a number of times. Ball, of Dublin, in his excellent work on the diseases of the rectum and anus, says: "There is no part of the body in which connective tissue is present in which the gummy deposit, so characteristic of the later stages of syphilis, may not be found; and we find that the lower bowel and anus prove to be no exception to this rule." Cases proving that syphilis attacks the rectum in a gummatous way are recorded by Leisol, Mollière, Verneuil, Barduzzi, Zappula, and many other noted authorities. So of the truth of the proposition no one can doubt, and I am sure that if a careful record of cases be kept by those interested in this subject, especially of their hospital and infirmary patients, it will soon be evidenced that syphilis is the greatest of all known causes for stricture of the rectum. For the last twelve years I have been connected with the Louisville City Hospital, in the ca-

pacity of either visiting or consulting surgeon, and have had under observation a large number of the *demi-monde*, and my record book will show a large proportion of these as suffering from syphilitic stricture of the rectum. Syphilitic stricture can be diagnosticated from cancerous stricture by taking into consideration the clinical history of the case. In the majority of instances a syphilitic history can be traced. I have quoted Allingham as saying that there was something peculiar about the feel of cancer which the operator's finger rarely mistakes even for simple indurated ulceration. I have also said that I have failed to detect that peculiar or, as described by some, that gritty feel of cancer, and yet I must agree with Allingham that it is a fact in some cases that the feel is peculiar; but if I were called on to describe it I could not. If, however, the cancerous mass is imbedded in the submucous tissues, a hard and nodular feel will be evidenced to the finger. In syphilis the induration is more even and extends with more regularity, and after a time is of a fibrous character, and is so indicated to the touch. There is not much difference as evidenced to the touch of a cancer of the rectum at this particular stage and the same character of cancer in the woman's breast. After ulceration has occurred, in the latter stages of the two diseases (syphilis and cancer), the diagnosis by the feel can be more plainly made out. At this stage cancer is more liable to break down. Syphilis is more liable to build up and become more fibrous in nature, if possible. At this time cancer is more apt to yield to the finger, and when it is pushed through the cancerous mass or stricture the breaking down is very perceptible. In the close stricture from benign causes, or syphilis, the opposite is true, because it is unyielding. We sometimes lay too great stress upon the disposition of the malignant growth to bleed. Although this is called attention to by many authors, it is certainly not true in the early stages, before the mucous membrane is involved; but in the advanced stage it must be believed that the mass could more readily bleed than the ulceration of a gummatous deposit. The swollen or enlarged

glands in the inguinal region can not be taken as a positive sign or indication of cancer, from the fact that they are swollen in many cases of benign ulceration and inflammation, and also from syphilis. Then, too, I have seen stricture of the rectum from syphilis just as painful as that caused by cancer. Syphilitic ulceration and stricture can be diagnosticated from simple ulceration by the feel or touch. In the cases of simple ulceration the constriction, as I have said, is usually annular, and often involves only the mucous membrane, as, for instance, when a stricture is caused by long-continued pressure. I wish again to say that as a method of diagnosticating stricture of the rectum, I object to the use of rectal bougies, especially those made of metal or hard rubber, and to all other instruments suggested for that purpose. They are exceedingly dangerous, especially in strictures located high up, whether they are caused by malignancy or are non-malignant. It is a well-known fact that the common seat of stricture is within the reach of the finger, and it is the rarest case to find one in the movable gut; therefore it is with the finger and not with instruments that they should be detected.

Symptoms.—The early symptoms of stricture of the rectum are very obscure and confusing. The great trouble is that the early symptoms are so masked or entirely *nil* that no attention is paid to them by the patient, but when he is forced to consult a physician a very decided stricture may exist. The changes made manifest in the rectum are those of a gradual deposit in the tissues of the morbid material, which goes on so slowly and insidiously that for a long time there are really no symptoms. I have seen many cases where the first symptom noticed was a so-called constipation (obstipation would be a better word), and upon the introduction of the finger a tight constriction could be felt. This may apply to any form of stricture. The first symptoms of stricture, then, are not the discharge of bloody pus, etc., indicative of ulceration that some describe. Therefore I must differ from those who place the symptoms of ulceration first and those of constriction

afterward. Indeed, I have often seen the rectum nearly completely blocked by a deposit without any ulceration at all. Ulceration can not take place and be accompanied with the symptoms incident to it—as a discharge of blood, pus, or mucus and pus—until the changes of inflammation have been such or the friction has been so great that the mucous membrane and submucous tissues have undergone that change which constitutes ulceration. When this latter condition is established we have the characteristic signs—diarrhœa, flatus, muco-purulent discharge, or rather muco-bloody discharge first, succeeded eventually by purulent discharge and alternating diarrhœa and constipation; the bearing-down sensation, together with tenesmus, reflected pain to the back and down the thighs, irritation of the kidneys and bladder, an uncomfortable feeling always about the rectum, the passage of small bits or tape-like actions, are all indications of the disease. I am persuaded that oftentimes stricture of the rectum is diagnosticated by the "tape-like" action, when in reality the molding is done by the sphincter muscle in an irritable state and that no stricture in reality exists. I am satisfied, too, that many cases of so-called chronic constipation are due to the narrowing of the lumen of the gut by syphilitic deposit. The same thing can be said of cancer or of simple stricture. This has occurred so often in my practice that I am now in the habit of examining the rectum in every case of chronic constipation. This same rule holds good in cases of supposed dysentery, for, as I have observed, dysenteric discharges are frequently only a symptom of stricture and caused by it. I have had but two cases of acute obstruction caused by the prolonged existence of a stricture of the rectum—one in the case of a young lady, who failed to report to me as often as necessary for dilatation of the stricture (she would not consent to an operation), and during a summer outing took sick and died from an acute obstruction; the other was a young married woman, the case occurring in the practice of one of our local physicians. I divided the stricture with the knife and relieved her.

Acute obstruction as a symptom of stricture I have never seen but once. The case has been reported in the chapter on cancer as occurring in the practice of Dr. H. H. Grant, of this city. I have examined a number of patients who complained of constipation only, who, upon being examined, revealed a decided stricture that the smallest finger could not pass, and yet evacuations were had through this. It is truly wonderful to see patients who have strictures of a very small caliber, who seem to enjoy perfect health, and whose physical proportions and development are not hurt in the least. It must not be forgotten, however, that these are dangerous conditions and constantly imperil the life of the patient.

Treatment.—In considering the treatment of this very formidable condition I shall adhere in the strictest sense to the pathological changes that have taken place in the bowel which constitute a stricture. This therefore rules out the treatment of proctitis or the subsequent ulceration, which is one cause of stricture, and brings us directly to the means of treating that which is the result of said causes. It must be granted that many times ulcerations which would eventuate in stricture are cured before that condition results. This can not hold good in cancer. Can it in syphilis? I know that authors report a number of cases of syphilitic ulceration of the rectum cured without consequent stricture, but in my experience this has been a very difficult thing to do. In the great majority of cases we are confronted at the onset with stricture, not with ulceration, so insidious is the disease, and in annular strictures resulting from simple inflammation of the mucous membrane the physician will frequently be called to treat the stricture and not the ulceration which produced it.

The methods practiced to-day for treating stricture of the rectum are: 1. Dilatation. 2. Incision. 3. Electrolysis and *raclage*. 4. Excision. 5. Colotomy. Of course, under the division I have made, we rule out general treatment.

Dilatation.—Kelsey, in speaking of dilatation, says: "By dilatation I mean gradual stretching, not forcible divulsion," and adds that the latter is seldom applicable. Dr. Willer

Van Hook, in his conclusions on the treatment of non-malignant rectal strictures, says: "Most valve-like strictures are amenable to treatment by gradual dilatation. Some of the annular strictures are sufficiently distensible to be relieved by gradual dilatation, but this treatment must, in this form of malady, be kept up indefinitely. Treatment by gradual dilatation prolonged indefinitely, as is usually necessary, must be tolerated only when relief is complete and when the patient is sufficiently intelligent to comprehend its importance. Forcible dilatation or divulsion is dangerous and should be abandoned."

Dr. Louis Bauer, in commenting upon the position I took in the general address on surgery before the American Medical Association in regard to the division or forcible divulsion of stricture of the rectum, says in the St. Louis Clinique: "The preliminary division of the stricture, as Dr. Mathews suggests, is certainly good practice; but whether divulsion or dilatation is to follow should depend upon the anatomico-pathological condition of the gut above the stricture. The use of bougies is appropriately repudiated by the author, his objections being well sustained by numerous fatal accidents from perforation of follicular ulcerations. The same pathological conditions which are frequently met with in stricture preclude, likewise, forcible divulsion."

To these views, expressed by the distinguished gentlemen, I must dissent. In replying to the quotation from Kelsey, I would say that I believe that gradual dilatation of stricture is objectionable, first, because, as Van Hook says, it must be kept up indefinitely; second, for the reason that by this form of treatment a continual irritation exists, more plasma is thrown out, and the strictured surface is increased. It may be true that some temporary relief is afforded the patient, but upon the recontraction of the tissue, which is sure to take place, we have lost more than we have gained. I believe that the pathology of stricture of the rectum from simple inflammation is very much like stricture of the urethra, and I believe with Otis that division of strictures in the urethra

shows much better results than treatment by gradual dilatation. I can not hold to the view that by the frequent passing of bougies through the strictured surface absorption of the tissues is caused. I believe, to the contrary, that the converse is true. To Van Hook's statement—that "most valve-like strictures are amenable to treatment by gradual dilatation"—I would say that, even admitting this premise, I would divide this valve-like constriction in preference to dilating it gradually. In the first place, I can see no danger in dividing this form of stricture. In the second place, by its division we accomplish in one minute what it will take an "indefinite time" to accomplish by gradual dilatation. Now, it will be remembered that these strictures are fibrous bands, and it would be very much like stretching an India-rubber ring; as long as the dilator was in it, it would be expanded; the moment you take it out it recontracts. But it is a very different thing to draw your knife through the rubber ring. It will remain expanded. So in this annular constriction of the gut; you may stretch it to-day, but next week it will have come back to about its usual size, unless, as the author says, it is kept up "indefinitely." To the contrary, if you cut through this fibrous ring, it is more apt to remain uncontracted. I quite agree with Van Hook when he says the treatment by gradual dilatation of stricture of the rectum must be prolonged indefinitely; but, as far as my experience goes in this plan of treatment, a better term to use, which is more to the point, would be, prolonged forever. He admits that in the different varieties of stricture, including the valve-like, annular, etc., this course of treatment must be kept up. I beg to quote in this connection a letter received from Dr. John P. Bryson, of St. Louis.

"St. Louis, *May 23, 1891.*

"Dear Dr. Mathews: I was much pleased to note in your Washington address on rectal stricture that the general trend of your researches led you to the view which seemed to compel an exclusion of all other so-called factors, leaving only inflammation as the essential one. For some years past

I have been greatly interested in the study of the ætiology and pathogenesis of stricture of all organs, with a view of evolving some general principles applicable throughout—this, of course, in immediate connection with urethral stricture. For the importance of such study and its influences on our efforts at radical cure, I think surgeons are entirely too neglectful. A full appreciation of it seems to me to be the key to the situation. I think that, *cæteris paribus*, the essential factor in all strictures is the same. I hope you will read a reprint which I send you by mail, and tell me some time whether there would be any objection to *chronic contracting periproctitis* (or proctitis) as a definition of rectal stricture, and whether there is not good reason to believe that it is essential that a lesion of the epithelial lining should first take place. You will also observe from the reprint that I am heartily in accord with you in the matter of excluding congenital conditions, cancer, etc., as either causing or being strictures. Very truly yours,

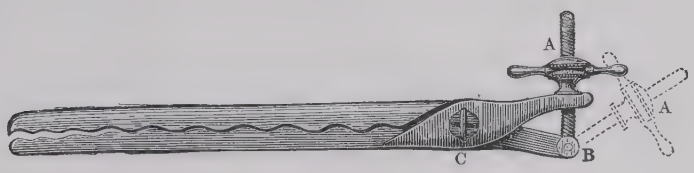
"JOHN P. BRYSON."

As the purport of this letter is so appropriate to the subject under discussion, I have quoted it in full. I have already said that I believed there was a certain analogy between stricture of the urethra and stricture of the rectum, or, as Dr. Bryson intimates, strictures, in whatever locality, must have more or less the same ætiology. Therefore I have taken occasion to mention valve-like strictures and annular strictures as falling under the head of strictures by the inflammatory product, which are analogous to strictures of the urethra, and should receive the same treatment. That "only inflammation is the essential one," so far as the factors are concerned, in the stricture, can not be denied. But to the question "whether there would be any objection to chronic contracting periproctitis, or proctitis, as a definition of rectal stricture," I must say that it depends entirely upon circumstances. I do not believe that proctitis *per se* produces rectal stricture, except of the character named—viz., valve-like or annular strictures,

or, in other words, that the mucous membrane is made to form the constriction by the inflammatory act and not by deposition proper, as will be observed in other forms, notably cancer and syphilis. In the two latter instances we have a constricted surface established by the deposition of morbid material, beginning usually in the submucous tissues. By this constant building process the rectum becomes filled up or occluded. Therefore I do not think it necessary in these cases that a lesion should exist, but maintain that ulcerations are secondary to the condition. But to the variety which bears an analogy to urethral stricture, I am sure that Dr. Bryson is correct when he maintains that a lesion is the starting-point, and is necessary to the formation of stricture. I am glad that so able an authority agrees with me that it is a better plan to lessen the so-called causes of stricture and embrace them under a general head. Dr. L. Bolton Bangs says, in a late article contributed to the Medical News: "Gradual dilatation is sufficient for soft, non-fibrous strictures of the posterior urethra, and of those of similar pathological structure in the bulbous stricture. It is also sufficient in some of the soft, not well-organized strictures in the penile urethra that are practically simple adhesions (?) of the surfaces of the mucous membrane; but for the organized strictures I believe that some form of urethrotomy is preferable."

I am so thoroughly in accord with Dr. Bangs on this subject that I must say that if we meet "soft, non-fibrous strictures," or those of a similar pathological structure, in the rectum, I might believe that gradual dilatation would effect some good; but it will be noticed that he says, "but for the organized strictures, I believe that some form of urethrotomy is preferable." So I say about organized strictures of the rectum. Gradual dilatation may do for the *nonce*, but, to effect any cure or permanent good, division of this organized stricture is necessary. Why forcible divulsion is seldom applicable, as Kelsey says, I can not understand. If a fibrous stricture exists, I am sure that forcible divulsion, or division, is the best method, for we do in a few minutes by this

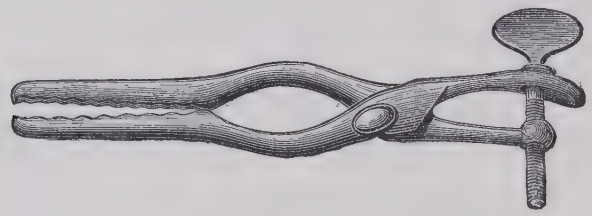
means what it would take weeks or months or an "indefinite time" to accomplish by gradual dilatation. Therefore I must confess that I put but little stress, or no stress at all, upon treating stricture of the rectum by bougies. In fibrous stricture it accomplishes but little good, and in the malignant one it would be dangerous. To the assertion made by Dr. Bauer —"but whether divulsion or dilatation is to follow should depend on the anatomico-pathological condition of the gut above the stricture"—I certainly agree. And in taking exception to my practice when he says "divulsion as proposed by Dr. Mathews in the case reported by him to the State Medical Society of Kentucky in 1878 would have torn the rectum of my patient into tatters," I desire to state, as I



Divulser for stricture of the rectum.

stated in my article, that in this one particular case I had to accept one of two alternatives—colotomy or divulsion. The patient appeared to be approaching a condition of *extremis*, and had a large abdomen; and, under the circumstances, I believed that it was preferable to try to break down the stricture which was found at the entrance of the sigmoid flexure. "That it did not tear the rectum of my patient into tatters" is evidenced by the fact that he recovered from the operation and lived for a number of years. But I wish again to assert that the point taken by Dr. Bauer is a very excellent one—that the pathological condition above the seat of stricture should be considered before divulsion is attempted; but, as he seemed to misunderstand my position in the subject, I wish to say here that I practice the divulsion and incision plan upon strictures of the rectum located within a finger's length from the external sphincter muscle, and it will be readily seen that the anatomical bearings to which Dr. Bauer refers are in my favor, from the fact that there can be no dan-

ger of tearing the rectum at all, for these strictures are located in the fixed portion of the gut. Indeed, I have always maintained, and have so said in this chapter, that no dilatation of a stricture should be attempted when located in the movable part of the rectum, and the instance that I cited was one surrounded by rare circumstances, and was considered a *dernier ressort.* So, between Dr. Bauer and myself, there can be no material difference of opinion. To Van Hook's eighth conclusion—that "forcible dilatation or divulsion is dangerous and should be abandoned"—I would say that I have been practicing this method for strictures of the rectum located within three and a half inches of the sphincter muscle for the past fifteen years, and that I do not consider it dangerous in



Dilator for stricture of the rectum.

the least; and therefore I argue that it should not be abandoned. I have already given my reasons for preferring this method to gradual dilatation, so I have only to say that my experience teaches me that I can get much more satisfactory results from dividing or divulsing strictures of the rectum within the measurement named than by gradual dilatation; and I would add that, if the strictures are located higher up in the movable gut, then I do not think either division, forcible or *gradual* dilatation advisable, for the reasons assigned by Dr. Bauer—viz., that it might possibly tear the rectum into tatters.

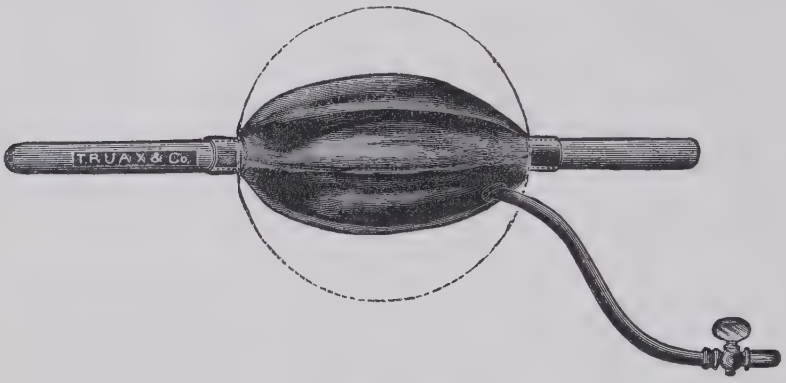
Incision.—I am very partial to incision or incisions for the relief of stricture of the rectum. Of the two operations recommended, internal and external posterior linear proctotomy, I much prefer the internal, recognizing at the same time that I differ from many distinguished authorities. It is urged for the external, which consists of not only going

through the strictured surface, but also in dividing the sphincter muscle, etc., that it is all-important to get the necessary drainage. I do not think so, and if I did, I believe the ill effects of dividing the sphincters outweigh the matter of drainage. I can not believe either that the internal incision is as dangerous as it is represented to be by some authors. In speaking of the two operations Van Hook says: "1. Internal proctotomy leaves a wound exposed to infection without proper dressings or drainage, and should be regarded as dangerous. 2. External proctotomy is a valuable temporizing measure, giving free outlet to fæces and pus, and allowing the patient to recuperate in general health so as to bear a radical operation."

In reply to this, I would say that it depends very much upon how the internal operation is done, whether it leaves the wound exposed to infection or not. There are many strictures found in the rectum which require a division of the fibrous structure only, and therefore, as none of the deep tissues are involved, it can not be argued that the dressings or drainage are so absolutely necessary. Indeed, I am convinced, in dealing with stricture of the gut, that it is not often necessary to make this deep cut back to the sacrum at all. If such necessity arises, then I would concede that external proctotomy would be the better of the two operations. My plan for doing internal proctotomy is as follows:

I introduce a speculum of small caliber through the opening in the stricture, and stretch the structures to a moderate degree. I then secure the instrument and, taking a long, sharp knife, I divide the constrictions of fibrous tissue down to a healthy base. This first cut is made in the median line; but often I am not content with one cut, therefore I make several, around the circumference of the gut. I then place a tampon, through which I have inserted a metallic tube for drainage and the escape of gases in the rectum. This tampon is aseptic, and usually dusted with powdered persulphate of iron. On the fourth day it is removed, and the rectum irrigated with a mercuric solution. If the operation is done

effectively, I have never seen the necessity of employing a bougie afterward for the purpose of dilatation. Patients are averse to their use, and, in my opinion, they do not accomplish the good claimed for them. My objection to the external operation, although I have practiced it often, is that to divide the sphincters when all the tissues are in a diseased



Prince's obturator.

condition invites non-union, and incontinence is nearly certain to follow. The suggestion of Weir—to confine the incision to the stricture, and then to drain the incision by a tube, brought out through the skin at the tip of the coccyx—I do not think will accomplish the purpose in many cases; besides, it leaves a channel which may not heal. To divide the sphincters, and then employ three or four deep provisional wire sutures between the anus and the strictures, leaving them loose and stuffing the incision with charpie, after the manner of Kelsey, I think unwise. It is said that one great danger of the operation is septic periproctitis, but under antiseptic precautions the danger, in my opinion, is reduced to a minimum. In one case of malignant disease, in which I did the external operation, rapid sepsis took place, and the patient died in twenty-four hours. I do not think either the internal or external operation should be done for malignant growths, unless total, or nearly total, occlusion has taken place. In all cases of non-malignant stricture, syphilitic or simple, either the internal linear proctotomy of the French

surgeons, or the external operation as practiced by many, is far more preferable, in my opinion, to either excision or colotomy, simply for the reason that these patients are seen at a late date when constitutional infection exists, and we can expect but a palliative effect from either one of the operations.

Van Hook says: "The uncomplicated annular contractures, not amenable to gradual dilatation, and the tubular strictures below the peritoneal limit are permanently curable by Pean's method of modified amputation, and occasionally (but with much uncertainty) by posterior linear proctotomy." I must say that Pean's method has never been looked upon with much favor by men who are in the habit of dealing with these pathological conditions. It would depend very much upon the character of stricture that we are dealing with whether we should think of the operation at all. In uncomplicated annular contractures of which the last author speaks, I would think it out of the question to consider Pean's method, for the reason that any contraction not complicated can be more easily and much more certainly treated without serious defect by the method proposed. It must be remembered that in doing Pean's operation we sacrifice the external sphincter muscle, and I must submit that I have never yet seen a case of an uncomplicated annular contraction of the rectum but that I would regard a much less serious pathological condition than the loss of the sphincter muscle would occasion.

In doing internal proctotomy, I have never had to deal with any of the conditions that are said to supervene upon the operation. My cut is not so deep as to make a receptacle for the discharges, and drainage has usually been accomplished by means of the tube, aided by the injections into the rectum. Van Hook, in his sixth conclusion, says: "Cases of stricture complicated by ulcers or fistulæ must usually be simplified by a preliminary posterior proctotomy and scraping out of fistulæ before the radical operation is attempted." I must confess my inability to see how a posterior proctotomy can simplify a case of this kind, and the author's idea of

scraping out fistulæ I can not comprehend. Let us take a case for illustration, after the nature of the one he has suggested.

A patient presents with a stricture of whatever kind, located, say, two inches within the rectum. We are to presume that it has closed sufficiently to prevent the free passage of fæces, and in consequence the mass is retained, more or less, above the constriction. As the result of this an ulceration takes place which excites to the formation of fistulous tracts, and the patient presents himself for examination and treatment. Now, if we follow the directions as indicated by the author, we will first do a posterior proctotomy, which consists in cutting down through the stricture to its very base, going through the tissues to the sacrum and extending the incision outward, dividing the sphincter muscle. I would ask how this "simplifies" the case. It certainly has done nothing to aid in the healing of the fistulous tracts, and has not accomplished in any manner the simplification of the radical operation which is to follow. Along with the posterior proctotomy, he says that the fistulæ must be scraped out. How and in what manner he does not state. Certainly scraping their internal openings would accomplish no good, and it would be impossible to scrape the inner surface of tracts without first freely laying open each and every one of them, and in so doing we have established many wounds, perhaps of enormous size, around the rectum. Neither does the author indicate at what stage after this the radical operation is to be performed. My experience has been with fistulæ that are caused by a strictured condition of the gut, that they run in many directions and devious ways. That in laying them open we institute a trouble far more serious than the one that exists. I think the proper plan would be to dilate, if you will, the stricture first, either gradually, forcibly, or incise it, and trust to this effort to stop the progress of fistulæ. I am sure that surgeons will bear me out that these are an unfortunate class of patients, and that but little good can be accomplished by doing the operation for fistulæ result-

ing from stricture, and certainly if we had done posterior proctotomy, laid open and scraped all the fistulous tracts in this imaginary case, we should have made this suffice, and not have considered the radical operation at all.

Electrolysis.—It does appear that where we can go effectually through a stricture by linear proctotomy at one sitting, it would be useless to attempt so slow a process as electrolysis. After a careful review of the subject, I can not believe that any benefit obtained is brought about by the dilatation from the electrodes used, as suggested by some. If there is a benefit in fact, it must be attributed rather to what is claimed for it—partial destruction of tissue by cauterization. To claim radical cures by this method, I must admit, seems untheoretical, if not unsurgical, and yet Dr. Robert Newman, of New York, and others, report many cases of stricture cured by this method. As this subject has received considerable notice by eminent medical men, including such names as Robert Newman, George H. Rohé, William C. Wile, and others, I desire to refer to this method of treatment of stricture of the rectum, and, in order that I may do so correctly, I shalt quote from one of Dr. Newman's articles.

"*Instruments.*—The treatment applied is virtually the same as in stricture of the urethra. The armamentarium consists of a good galvanic battery with conducting cords, handles with sponge electrode, a few binding screws, a set of rectal electrodes of different size and shape, and a milliampèremeter to measure the electric current. The electrodes have at one end a metal bulb ; copper or brass, silver-plated or nickeled, is best. The form is flat or round, the latter more egg-shaped. They are made in sets of different sizes. The length is from one fourth inch to one and one fourth inch, and the circumference from one and an eighth to three inches. The stem of the electrode, except at the extremities, is insulated with hard or soft rubber; some are flexible, others stiff. If larger sizes are needed, I use metallic bulbs, similar in shape and size to a vaginal electrode, which are from three to five inches in circumference.

"*Modus operandi.*—The patient may be placed in Sims's position on the left side, but in the majority of cases the lithotomy position on the back is preferable, because in the examination and operation the anatomical relations of rectum and colon with the sigmoid flexure can be better appreciated. The galvanic battery is brought into action with the switch at zero. The sponge electrode, wet with warm water and connected with the positive pole of the battery, is placed firmly in the patient's hand, but in some cases may be pressed on the abdomen. The negative metal electrode is lubricated with glycerin and inserted per anum to the seat of the stricture, and only then the electric current is slowly increased from zero, cell by cell, till the desired strength is reached, which is ascertained mostly by the sensation of the patient. The strength of the current allowable varies from five to fifteen or even twenty milliampères, according to the seat of stricture, the nature of the neoplasm, the size of the electrode, and the susceptibility of the patient, the rule always being not to use a strong current if a weak one will accomplish the object. The *séance* may last from five to fifteen minutes. No force should be used; the electrode should be kept steadily against the stricture, and only guided; the electrolysis does the work by enlarging the caliber, and then the instrument passes the obstruction. At the end of the *séance* the current is reduced slowly, cell by cell, to zero, and not until then is the electrode to be removed. It will be perceived that the occasionally stronger current in this operation is the only difference for the treatment for urethral stricture. *Séances* may be repeated in one or two weeks. According to circumstances and complications of the disease, some modifications of the treatment may be called for, one of which is the use of needles in the mass of the stricture instead of the metal bulb at the negative pole. My small electrodes are very flexible and long, the object being that undue force is impossible while being used. The instrument also will accommodate itself to the flexure and easily enter the colon, thereby increasing the field of observation."

Whatever might be my opinion of the use of electrolysis in the treatment of strictures generally, or of the stricture of the rectum in particular, I could not agree with the author that the field of observation would be increased by the instrument accommodating itself to the flexure and the colon. If strictures were observed in these parts, it certainly would not be advisable to try to treat them by the electrode. The subject of electrolytic decomposition of organic tissues is under discussion, and whereas I am inclined to think that organic tissue will more or less yield to electrolysis, I am not yet quite sure of its applicability in the rectum. The following are Dr. Newman's conclusions: "1. Electrolysis in the treatment of strictures in the rectum is not a panacea; on the contrary, failures may happen, and probably will, if the stricture is due to carcinoma. 2. Electrolysis will give improvement to the stricture when all other methods have failed. 3. Electrolysis will cure a certain percentage of cases without relapse and without the necessity of an after-treatment or using bougies. 4. The best chances for a cure are through the fibrous inflammatory stricture."

Having no personal experience with this method of treating a stricture of the rectum, I am not prepared either to advocate or disprove the statements made.

Excision.—In speaking of the amputation of the rectum, I think it would be better to employ the word *extirpation* in lieu of excision. Excision of the rectum conveys but little idea of the operation. I can not appreciate the idea of excising a benign stricture, not from any serious doubt as to whether it could be done or not, or of any dangers attending the operation, but there are methods so much simpler in their nature for the relief of these strictures that I can not conceive of the necessity of the radical operation. Of all evil consequences that could possibly befall a patient that had undergone an operation for rectal trouble, incontinence of fæces is the worst. Therefore, in considering the treatment of stricture of the rectum by excision or extirpation, we must consider the loss of the function of the sphincter muscle.

Colotomy.—In dealing with cancer of the rectum I take the position that the strictures resulting therefrom could not be considered as strictures from a legitimate standpoint, and therefore any method that looked to their treatment could only be considered palliative in that the disease went on in its destructive course; but in strictures other than malignant the proposition is a very different one. Therefore I would propound a question in order to make myself better understood: Is colotomy to be recommended as a procedure at all in the treatment of stricture of the rectum? I unhesitatingly answer Yes, although in a consideration of cancerous stricture I hold the proposition of colotomy in abeyance. Whenever a stricture other than malignant is located in the movable part of the gut, or in the sigmoid flexure, either causing total obstruction or about to cause it, colotomy should be done. If, then, I am asked why in this instance, and not in cancerous stricture, I would answer that in doing the operation under these circumstances we prolong life indefinitely. Indeed, I see no reason why one should not live out his allotted days, or at least live for many years, after the colotomy is done for a benign stricture. A fibrous stricture in the locality named would likely cause death by occlusion if let alone. It is beyond reach for either dilatation, division, or excision. There is nothing in the stricture *per se* to cause death, and a fatal result would only occur in the manner mentioned. It acts after the manner of a foreign body, causing obstruction; can not be reabsorbed, and does not cause death by infection of the body. The constriction having blocked the channel of the bowel, we open a gateway above for the escape of fæces, and thereby prolong life indefinitely. To do the operation for cancerous stricture the disease is neither stayed nor cured. To the contrary, in benign or syphilitic strictures the patient will live to thank you for saving his life. If, then, it is decided to do colotomy, which of the two operations is preferable, the lumbar or extraperitoneal, or iliac or intraperitoneal? I think the anatomical phrase used in designating the two should decide it. An operation extraperitoneal is

certainly to be preferred to one that is intraperitoneal, as I believe that it is safer not to open the peritonæum than to open it. Still I wish to reiterate that in cases of obstruction of the rectum or sigmoid flexure, outside of cancer, the inguinal operation has some advantages if we are not to consider the opening of the peritonæum. The methods of doing the two operations are described in another chapter.

Dr. Joseph B. Bacon has devised a new operation for the cure of strictures of the rectum and sigmoid. He describes the operation as follows:

"After complete anæsthesia the patient is placed in the extreme Trendelenberg posture, and a laparotomy is made in the median line from the pubis to the umbilicus. This incision will enable the operator to see the rectum and measure the extent of the contraction, and to decide how much of the sigmoid he must use to fold over the stricture and anastomose below. Having determined the amount, the sigmoid is drawn well up into the abdominal wound, and an assistant places a small Murphy clamp above and below that point of the gut selected for the anastomosis button. An incision is now made into the gut and the male half of the button firmly secured in position in the usual way. This half of the button is now carefully held by an assistant, while the operator scarifies the surface of the sigmoid and rectum that are to be approximated. The next step in the operation is to place the female half of the button in position just below the stricture, as follows: An assistant takes the instrument, places half of the button over the trocar point, and inserts the button through the anus and up the rectum to the lower border of the stricture; keeping the point of the trocar guided anteriorly, he presses the neck of the button against the anterior rectal wall. The operator, by feeling down into the pelvis through the abdominal incision, readily finds the point of the trocar, and, by pressing directly over it with a pair of dressing-forceps, the trocar perforates the rectal wall and carries the neck of the button with it. Two or more sutures are now put in the peritoneal layer of the gut so as to hold the surface together and secure a firm union. The abdominal wound is closed, and the patient treated as after any ordinary laparotomy. The button will be expelled in from five to seven days. A clamp is now inserted through the anus, one blade of which is introduced through the button-hole, and the other blade through the stricture opening and firmly clamped upon the septum. Each succeeding day the handles of the clamp are pressed together one or two notches until the septum is severed. The caliber of the rectum is now increased by the addition of the extra channel."

CHAPTER XVI.

CANCER OF THE RECTUM.

CANCER is the most formidable disease that is met with in the rectum. There is so much difference of opinion in regard to its pathology that I sometimes think that the older surgeons were correct, in a practical way at least, in making the term malignant synonymous with cancer. We very well know that there are some forms of tumors that reappear after extirpation that are called simple; and yet when tumors have a tendency or a disposition to attack neighboring glands, or to reappear after they have been once removed, they are very suspicious indeed. That was a quaint description of cancer given by Lorenz Heister in 1731, in which he says: "When a scirrhus is not reabsorbed, can not be arrested, or is not removed by time, it either spontaneously or from maltreatment becomes malignant, that is, painful and inflamed, and then we begin to call it cancer." We are amused at this homely definition by the old master; but when we stop long enough to think, we can honestly ask ourselves how much beyond this have we advanced in the study of this much-dreaded disease? Even with our much-vaunted knowledge of anatomy, histology, and pathology, the most learned of us call a halt before pronouncing upon the character of tumors, drawing the line, as it were, between benign and malignant growths. In a very notable case not long ago the daily press heralded one day the information, taken from the doctor's bulletin, that a crown prince had a warty excrescence in his throat; the next cablegram, that it was a cancer. We remember, in the history given us concerning the distinguished

man's affection, that a specimen of the growth was submitted to a learned microscopist that the disputed question might be settled. I dare say that there is not a surgeon but has been deceived by the verdict of the microscope in such cases, and I have sometimes thought that the physical signs and clinical history were of much more value in determining the nature of suspected tumors than anything that the microscope can reveal. That the *cells* have proved inefficacious, the *alveolar* formation not a certainty, and *epithelial proliferation* not a guarantee, is admitted or at least mooted. So it may be as Billroth says: "In a hundred years will they laugh at our present anatomical and clinical definitions of cancer."

While we are dealing with the histological and pathological structures of the tumor, a rapid mortality follows in the wake of the disease. The Registrar-General's reports show that in England, between the years 1861 and 1871, there was one death from cancer in every 2,570. Should it be desired by any of my readers to investigate the subject of cancer in relation to its histology and pathology, I would respectfully refer them to Chapter XIV in Cripps's excellent book on Diseases of the Rectum and Anus. It has been taught for so long that cancer is transmitted by inheritance that the profession accepts the statement without much inclination to disbelieve it. Cripps, in dealing with this phase of the subject, says: "The hereditary nature of cancer is based upon evidence derived from the following sources:

"1. That it is a matter of common notoriety that cancer runs in certain families.

"2. Evidence founded upon certain statistical facts."

I have never had it settled to my own satisfaction that cancer was strictly a hereditary disease. The same notion obtained in the profession throughout the world in regard to phthisis pulmonalis, until Koch discovered the tubercle bacillus and revolutionized our idea concerning the disease. May it not be that the time will come when something incontrovertible will convince us that our views in regard to the

heredity of cancer are also a mistake? "That it is a matter of common notoriety that cancer runs in families" can not be gainsaid so far as the notoriety is concerned, and yet we all know that they are exceptional cases. Sometimes we will have a case such as the one narrated by Sir James Paget, "in which a lady died of cancer, two of her daughters died of cancer, and eight of her grandchildren," and yet, as Cripps aptly says, the number of her children and grandchildren who *did not* die of cancer is not mentioned. Now, is it not a fact that, where we can recall two persons in the same family dying of cancer, we can recall many, very many, cases where in large families only one person died of the disease? I have been able, in my practice at least, to do this. The second source from which Cripps forms his conclusion is "evidence founded upon certain statistical facts." Now, these statistical facts are usually gathered from the patients themselves, and how unreliable such evidence is can be appreciated by every physician. Not one in a thousand such people can give you a clear evidence that the death in the family to which they refer did take place from cancer. It is a fact that, before gynæcology had advanced to the scientific position that it now maintains, a great number of deaths occurring from simple tumors within the abdomen were put down in the list as caused by cancer. Further than this, we have intimated that the medical testimony is very much wanting, because of the difficulty of making out or diagnosticating malignant disease. The two most important questions that force themselves upon our attention when dealing with suspicious growths are: 1. Is it a malignant or non-malignant tumor? 2. Is its removal advisable?

To tell persons who come to you for honest advice that they suffer from cancer when there is a reasonable doubt, is little less than criminal; and yet there are circumstances that might demand a positive opinion, if such was held. I am in the habit of not telling my patients of the existence of cancer. By such information I am satisfied that life is shortened. Thus we see that a diagnosis becomes of the greatest im-

portance. I remember upon one occasion I violated this rule of mine in the following case:

Case.—A lady was brought to me suffering from a growth in the rectum, and she was accompanied by her physician and most of her family. I made a careful examination of her case, and, after submitting a specimen of the tumor to a microscopist, she said to me: "Doctor, I know that I have cancer of the rectum, and I want you to tell me what your honest opinion is. I am not afraid to die, and I have some important business to arrange looking to such an event which will take me some time to accomplish, and it is for this reason more especially that I want to know your opinion." The doctor confirmed this statement of hers, so I thought under the circumstances I would tell her. When I told her that I believed she was suffering from an incurable disease which might end her life soon, she grew suddenly pale and sank back on the bed in a fainting condition. Although she supposed she could stand the shock, she overestimated her power. For a number of days she was in a serious condition from the mental impression made on her by simply confirming her own idea of her case. The best part of the story is, however, the tumor was excised, and it proved to be not cancer but benign, and she made a good recovery. The consolation that I had was that the microscopical examination agreed with my diagnosis in the case. But the case illustrates how chary we should be in telling patients that they have malignant disease.

The first question is, Is it a malignant or non-malignant tumor? This is of the most importance to the patient. How are we, then, to arrive at a correct conclusion?

Diagnosis.—It is not my purpose in this chapter to deal with the ætiology of the disease, nor to refer particularly to its histological aspect. First, then, I would say, in making a diagnosis of cancer, I seldom rely on the microscope. In my opinion, the clinical features of a case are of the most importance. My remarks apply to cancer wherever located, since the characteristics of the disease are the same without regard

to locality. Without stopping to argue the mooted points, I will state a few observations that I believe to be facts. I am inclined to believe that cancer is a local disease, due to traumatism and irritation. I can not substantiate this belief, neither can those holding opposite views prove that I am wrong. It reminds me very much of a controversy that every once in a while goes the rounds of the medical press—viz., whether the mother's mark is due to maternal impressions or not. Just as soon as it is agitated, there are many cases reported that would look to be incontrovertible, and yet, from a scientific standpoint, it must be said that the position is not tenable. In cases of cancer I have ceased to question about family history, and am inclined to take the statement of heredity as a coincidence. In other words, in my opinion, more escape cancer where family history of the disease exists than have it, under the same circumstances. The so-called *cachexia* of cancer is misleading. In advanced stages of the disease I have often anticipated but not recognized it. The same appearance may be observed under many conditions. The same pallor, emaciation, etc., arise from other diseases. I do not believe either in any *facial* indication of cancer. In my opinion, if it exists, it is due to fear rather than to infection. The man under sentence of death is likely to have it. Neither do I believe, with Allingham and others, that the *odor* of cancer is pathognomonic. The authors are accustomed to give *hæmorrhage*, or a disposition to bleed, as one of the symptoms of cancer. It is not at all characteristic. I have had under my observation many cases of cancer which never lost enough blood to call it a factor in the disease. *Pain* is pronounced a prominent symptom. Even its *character* is said to be peculiar. My record book will show a number of cases that have died with the disease, and pain never existed to any degree. *Age* is said to play its part as well. Indeed, I have heard some physicians exclude the thought of cancer because "the patient was too young." In my practice I have met with two cases of cancer in patients under nineteen years of age, and in one under seventeen. The majority of cases

of cancer of the rectum observed by me have been under the age of forty-five. *Touch* is said to indicate much in determining the diagnosis. Allingham says: "There is something peculiar about the feel of cancer which the practiced finger rarely mistakes even for simple indurated ulceration." I have often felt for that peculiar gritty feel, and found it in but few patients. Hence I am inclined to believe that one or more of the so-called symptoms of cancer may be absent. If, then, the microscope is not infallible, and many of the physical signs are absent, how are we to determine the question? I shall only speak of making a diagnosis when the disease is located in the rectum, and deal with the distinction between malignancy and non-malignancy, not caring to enter into a discussion of the different classifications of cancer. I recognize the fact that certain conditions are malignant which are not cancerous, yet I deem it quite sufficient, for the purpose of elucidation, to speak here only of these two types. To attempt anything further than this would bring us into the consideration of many knotty questions. We have attempted to show that it is a difficult thing to be certain in a diagnosis of cancer, and I am equally sure that the uncertainty is just as great when we attempt to designate the time that a benign tumor has become malignant. After a learned dissertation upon the histological aspects and microscopical evidences of cancer, Billroth says: "I acknowledge that it is difficult to distinguish carcinoma from adenosarcoma and alveolar sarcoma." Therefore, to sum up in the matter of making a diagnosis, I would say that the symptoms to be relied on most are (*a*) a disposition to ulcerate, (*b*) rapid infiltration, (*c*) secondary deposits. Certainly these are more trustworthy than many of the so-called symptoms, or often of the revelations of the microscope. No surgeon should be guilty of making a positive diagnosis of cancer, with or without the microscope, until he has learned the *clinical* facts of the case.

Method of diagnosticating Cancer of the Rectum.—Nothing should be taken for granted in examining a patient for rectal dis-

ease. I have known cancer of the rectum treated for piles, and *vice versa*. The history of the disease, with symptoms, should be related by the patient, and not by a second party. If cancer be present, some or all of the following symptoms will be mentioned: Pain in the back and thighs, general lassitude, morning diarrhœa, flatulency, straining at stool, the passage of some blood, mucus, or pus. All these may arise, it is true, from simple ulceration of the gut, but they are, to say the least, suspicious. An examination of the rectum should now be made. The best position for the patient is upon the left side. An inspection of the external parts may reveal much or nothing. It is frequently stated that cancer generally begins at the anus. This is not my experience. Out of an observation of between one and two hundred cases, the majority of them have begun above the anus. Should this be the part attacked, however, an external observation will reveal the fact. If not, there will be but little evidence shown on the outside of the rectum. I have had many cases come to me for examination of some supposed trivial rectal trouble, and it was revealed that the rectum was filled with a cancerous growth. After thorough inspection of the external parts, the rectum proper should be examined. This should never be neglected. I have known patients to be operated on for fistula in ano, the surgeon neglecting to examine the rectum, where a cancer existed. Upon more than one occasion I have seen patients who had had their *piles* (?) operated on by tying or injecting a portion of a cancerous mass. In this disease especially, the best method of examining the rectum is with the finger. It should supersede all instruments. I have long since discarded the speculum, except in the fewest of cases. There are but two conditions, to my mind, with which cancer in the rectum could be confounded—one, simple ulceration with inflammatory deposits; the other, syphilitic ulceration, with or without the consequent stricture. Mistakes have often been made. I have made them. First, from simple ulceration with inflammatory deposits. Simple ulcerations can usually be traced to some

definite cause, as dysentery, foreign bodies, etc. To the touch the induration has a smooth, continuous feel. The ulceration is more or less clear-cut, and the discharge is like that in the same kind of ulceration elsewhere. If cancer, a firm growth will be felt, involving perhaps only the mucous membrane at first, and freely movable, likely epithelial in character. If scirrhus, hard nodules are found around, imbedded in the submucous tissues, and, in the man, often involving the prostate gland. Secondary deposits have likely taken place in the glands, liver, etc. If simple ulceration, there is no disposition to infiltrate, or for the growth to break down. If cancer, the tissue yields to pressure, and infiltration takes place rapidly. Hæmorrhage from either condition is hardly a factor, as neither in my experience bleed much, except in rare instances occasioned by the uncovering of an artery, by degeneration of its coats in cancer. The odor, as I have said, may be absent in cancer, and is not, therefore, pathognomonic. Some confusion might arise over gland involvement. It is true that simple inflammatory action in the rectum may excite the same condition in the adjoining glands that is excited in the axilla from mammary irritation, or in the groin from rectal inflammation. The question would naturally arise, Is an inflamed gland already infected? I could scarcely admit this as a principle, and yet no one can definitely say just when lymphatic infection takes place. Second, from syphilitic deposit, with consequent stricture. When ulceration is found in the rectum, it is well to suspect syphilis as the cause. I make this rule to apply to all stations in life. The rich and the virtuous may be the victims as well as the poor and degraded. In an article read before the Kentucky State Medical Society I maintained that syphilis was the most frequent cause of stricture of the rectum, and not cancer, as stated by some. I am equally sure that many cases of syphilitic ulceration of the rectum are mistaken for cancer. Anticipating syphilis in these cases, we should trace the history, and carefully examine the throat, skin, scalp, shins, etc.

Case.—Dr. B. asked me to see a young married woman with him who was suffering from stricture of the rectum. The doctor was inclined to believe that the condition was caused by pregnancy, the patient having borne a child about a year before. Upon examination, a stricture was found, beginning one inch above the sphincter muscle. It was impossible to introduce the smallest finger through it. A free division was made through the constricted surfaces. After this her general health improved and she took on flesh. During one of her visits to my office she remarked that she had failed to call my attention to an eruption that had been on her body for some time. I looked at it and suspected syphilis, but referred her to a dermatologist, who pronounced it some skin trouble and prescribed an ointment. She used this for a long time without effect. I then put her on fifteen-grain doses of iodide of potassium, and at the end of three weeks the eruption had disappeared. Arguing from cause and effect, I concluded that this woman had syphilis and that this disease was the cause of the stricture. I am certain that the woman was virtuous. There is a wide difference given to the feel between cancerous stricture and syphilitic stricture. The induration from syphilis is firm but not nodular, and does not yield to pressure. There is no rapid infiltration of tissue, and contiguous parts are but slowly invaded. The discharge from syphilitic ulceration is more like that from simple ulceration, and not the degenerated tissue discharge of cancer. The stricture from syphilis is like fibrous material—very firm—while from cancer the bands are nodular, with a disposition to degenerate. Hence I imagine that the diagnosis between syphilitic ulceration of the rectum and cancer can be easily made.

Classification.—A very good division of cancer, at least for general utility, would be hard and soft; and yet the structure and clinical characteristics of carcinomas have suggested their division into the following varieties: (*a*) Scirrhus, or chronic carcinoma. (*b*) Encephaloid, or acute carcinoma. (*c*) Squamous epithelioma. (*d*) Columnar-cell epithelioma.

I scarcely believe the term colloid should be applied to these tumors, from the fact that any of the forms of cancer may degenerate into this colloid condition; nor do I believe it would accomplish any purpose to use the word sarcoma to differentiate between malignant and non-malignant growths. That there are tumors which have connective tissue for their type there is no doubt, and I suppose the word sarcoma, although meaning very little, is about as good a word as can be used. But as we are dealing with malignant tumors, or, to speak more properly, with cancerous tumors of the rectum, we shall not refer to the word sarcoma. I recognize the fact that the intimacy of resemblance between a sarcomatous tumor and cancer is so close that the microscope will often fail to decide, and I believe that it would be impossible to distinguish between them without a reference to the clinical facts in the case. Nor do I believe that the distinction is of much surgical importance; for, if a tumor exists in any region of the body, rectum or elsewhere, it is the surgeon's duty to remove it. He can settle the histological aspect, if he so desires, for his own satisfaction after, rather than before, the operation. Nor do I consider it essential for treatment to determine whether a growth in the rectum is a scirrhus one or an epithelioma; whether it be one or the other, the treatment should be radical and not palliative. It is true that epithelioma is less malignant than scirrhus, and yet this point has very little to do with determining an operation. We know that either variety will infect neighboring lymphatic glands and cause a rapid infiltration of tissue and a subsequent disintegration. It may be true that epithelioma much less rarely reproduces itself in the viscera than the other form, though it ulcerates earlier; but it has the infiltrating quality, and the adjacent tissue is made to succumb to its ravages. It is only a question of time when an epithelioma becomes just as malignant as an encephaloid cancer, which is considered as having the greatest degree of malignancy; therefore the histological aspect of cancers aside, I shall refer only to hard cancer or scirrhus, which is of the glandular

type, and to epithelioma, which is of the epithelial type. It is said by most writers that the variety of cancer oftenest found in the rectum is of the epithelial type. Now, if we are to take clinical evidence as facts, my record book will show that the scirrhus form of cancer has been found just as often in the rectum as epithelioma; especially so if we are to believe that it takes its origin at the anus and not within the rectum proper, and that it begins as a "hard, dry, warty nodule." I must confess that I have seen very few cancers around the rectum of this nature. Believing in the pathology of cancer as I do, if epitheliomas appear at the verge of the anus in this manner, I would have the utmost confidence in the cure of the patient, if the growth was removed before there was any further infiltration or gland involvement. I have said that I have often met with scirrhus. I must qualify the expression by saying that I believed it to be scirrhus because I found it a hard growth and imbedded in the submucous tissues. The epithelial form of cancer is supposed to begin in the mucous membrane and, for a while at least, is movable with it, the difference being that in the epithelial variety you could freely move the tumor over the submucous tissues, and in the scirrhus form you could freely move the mucous membrane over the tumor in its incipiency. But whether it be one variety or the other, the progress is very much the same. True, one may go a little slower in the race than the other, but it will have the same disastrous result after a while. It is a well-recognized fact that cancer sometimes follows an injury and is known as traumatic malignancy. The form of the injury is said to be a contusion, and a very small affair at that. I think this is a very strong point in favor of the local origin of cancer, but I do not propose to argue it here, but what I wish to say is, that in cancer of either one of the four varieties that I have named, or of the six or seven varieties that are named by other authors, I wish to impress the fact that it begins at one certain local spot, and that the constitutional symptoms gradually develop afterward, and while these constitutional symptoms are progressing, it is in direct ratio to the infec-

tion which takes place from the local diseased spot. It has been the history of cancer from time immemorial that all of our so-called palliative treatment availed but little, if anything. Indeed, I am persuaded that in many instances, if the surgeon had cut away this growth instead of taking time to watch the changes from a histological standpoint and wasting time about the character and disposition of the cell growth, he might have saved life that the disease afterward destroyed. Therefore I wish to impress, that in every single case where there is a chance of removing the entire growth—and this time is more especially during its incipiency—it should be done and no time wasted with palliative treatment. It is common with authors to say that there are two modes of treatment for cancer—viz., palliative and radical. Now, I would reverse this order of treatment and say, first radical, and afterward palliative. A great deal of time is taken up by authors in describing the manner in which cancer spreads and propagates itself. This is all very good for the benefit of science, but it does no good to the patient. All that is necessary to know, after making the diagnosis of cancer, is that it does spread and propagate itself, and that generally in a rapid way. Apprehending this, we should endeavor to intercept it and end its ravages, if possible. One objection that I would prefer against palliative treatment is that it is conceded that certain local applications excite malignant growths and cause their more rapid extension. There is a common belief that by performing an operation for cancer the death of the patient is hastened, and the experience of the surgeon enforces the same belief on him. It can not be gainsaid that there are many unnecessary operations performed for cancer. When the disease has progressed to a certain extent, it is out of the question to do any operation, and yet it is done every day. I have seen a woman's breast removed for a malignant growth and the infected glands in the axilla allowed to remain. I have seen a cancer of the rectum removed when the lymphatics in the lumbar and inguinal regions were thoroughly infected and remained untouched. I have seen a hysterec-

tomy done when the woman was already dying of sepsis. Better not do any operation at all than a half-way one or to operate when it will do no good.

Symptoms.—I have referred already in an incidental way to the symptoms in rectal cancer, but I wish to add that they are so few and unpronounced as to have very little weight in the incipiency of the growth or to call our attention to it. Indeed, there are no symptoms at all in the very beginning of the rectal cancer other than those set up by irritation and reflected to contiguous parts. One person may complain of vesical irritation, another of pain in the back. As the disease advances these patients are frequently prescribed for as having diarrhœa or dysentery. A scirrhus cancer, originating as it does in the submucous tissues, does not involve the mucous membrane for quite a while; therefore the ulcerative process is very slow to take place, and we have no blood and mucous discharge until the tumor is very pronounced and its mucous covering has become ulcerated. Unfortunately, it is too true that the nature of this disease has escaped the notice of the physician, and the surgeon sees the case after it is fully developed, when in the majority of instances it is too late to operate.

Case I.—I was called to see a lady in the southern part of the city who had been so constipated (?) for a number of weeks that her bowels had refused to act even in response to a strong purgative treatment. This woman had no special cachexia and was in her usual flesh, with good appetite, locomotion good, and she was in the habit of attending to her regular duties and visiting her friends. I had her family physician called, when I made an examination, and found a hard cancer beginning above the sphincter about two inches and nearly completely blocking the rectum. She had never had any special diarrhœa and no discharge of blood or mucus, and yet the case was a very plain one. At this stage of the disease I did not advise any special treatment except to keep the bowels open, which was accomplished at first by the introduction of a very small rectal tube and injecting above the growth. This case took the usual course.

Case II.—A lady was sent to me a short while ago from the extreme South with a letter from her doctor, who said to me that he had detected a growth in the rectum, but could not determine its nature, and therefore had sent her to me. This woman weighed at least one hundred and fifty pounds, was of a very good color, ate and digested her meals, and did not regard herself as an invalid. An examination revealed the existence of a hard cancer on the dorsal aspect of the rectum, fully the size of my fist, with infiltrations above. She being a long way from home and alone, I thought it my duty to tell her that she was in a serious condition, but did not reveal to her the nature of her trouble. I advised her to return home, and when the obstruction became more pronounced to return to Louisville, when I would do a colotomy upon her. I explained to her the nature of this operation, as I do to all patients that I expect to do a colotomy on. She went South, and her doctor wrote me that she began to decline rapidly from that time, and he believed that much of it was due to her mental depression, she having conceived the idea that she had cancer, or, in any event, she dreaded the operation proposed. In his second or third letter, which was about three months from that time, he wrote me that she had died.

Case III.—I was called to see a wealthy contractor who had total obstruction of his bowels. This man weighed two hundred and twenty pounds, and had never complained of any rectal trouble; indeed, had complained of no trouble at all except the difficulty in having an action within the last two or three weeks. Up to this time he had been able to attend to all his arduous duties simply because he regarded himself as a well man, not knowing that he had any disease. A rigid examination showed a cancer in the sigmoid flexure, and a total obstruction at its entrance.

These cases illustrate the fact that the course of the disease is very insidious. They also demonstrate that the well-recognized symptoms observed ordinarily in cancer of the rectum may be absent. Those who contend that cancer is a

constitutional disease, with local manifestations, might with a good deal of force in their argument say that malignant trouble frequently existed in the rectum where trauma could play but little part. When speaking of traumatism it should not be supposed that it is necessary to find a wound of any extent or dimensions. A lesion scarcely perceptible to the naked eye is quite sufficient to admit of the micro-organism which produces tetanus, and a lesion in the rectum of the same insignificance may be the starting-point of cancer. We have said that a local irritation of malignant growths will excite them to further development. We can also add that local irritation may excite a cancer, thereby being its cause. It is proverbial of the chimney-sweep that he is a special subject for cancer, and yet I imagine that no one would take the position that cancerous patients were habitually chimney-sweeps. It must, therefore, be due to the local irritation that the malignant abrasion was started, and that it increased by said irritation being kept up. The belief common is that a point of whalebone will set up an irritation which may end in malignancy ; and it has become a common practice with physicians, whether they believe it or not, to try and trace the tumor in the woman's breast to the pressure of her corset. I dare say that there are but few surgeons but can trace cancer in some of their patients to a blow or a fall, or to some sort of irritation at a local spot, and how often it is that in cancerous growths embracing the periosteum the disease can be traced to some injury done to it by a lick or a kick or trauma of some kind ! It is also a recognized principle in surgery that growths of any kind involving the tissues should not be subjected to a continual local irritation. Therefore, apropos to this line of thought, the anatomy of the intestines, taken along with the physiology of defecation, proves the fact that there are three points of retention and accumulation of the fæcal mass—viz., the cæcum, the sigmoid flexure, and the rectum. The cæcum is the starting-point of this mass, from which it is hurried along to the sigmoid flexure, and then dropped into the rectum. If this is not passed, antiperistaltic

movement lifts the mass back, or much of it at least, into the sigmoid, and there it remains for a time in its dried condition. Now, it can be easily understood that all of the mass, perhaps, does not start on its onward course from the cæcum ; some of it remaining becomes dried and acts as a local irritant. Then the sigmoid, becoming the receptacle of the mass when refused by the rectum, and the rectum holding a portion of the mass each day, both are irritated thereby. The natural pathology would be that a congestion of the blood-vessels was started at one of these points, which was followed by an abrasion and inflammation. The fight still wages with pathologists whether it is the appendix vermiformis or the cæcum which is responsible for the degree of inflammation and consequent suppuration, which is so often followed by death ; and yet I imagine that there is no one so enthusiastic in his advocacy of the appendix being responsible for this condition that would not admit that the cæcum frequently becomes impacted with fæces, which results disastrously. It will be admitted that the three points named—the rectum, the sigmoid flexure, and the cæcum—are favorite seats for cancer. We have shown how it is possible that an abrasion may be made by these hardened fæces, and a continual irritation kept up by their presence. Therefore I am not willing to admit that cancer can not be caused in the rectum by trauma as well as in any other part of the body. That mechanical irritation, either from pressure continued or from a constant rubbing of the part, will produce cell-growth, can not be denied. We have many examples of it in small benign tumors which grow in this manner. We are all suspicious of warts, and advise the patient not to subject them to a continuous friction. If they are so subjected, we see the evidence of it in rapid cell-growth. The natural follicles of the gut may be by such friction the starting-point of cancer. It is frequently urged, to rebut such evidence as this, that secondary deposits take place from cancer in the different organs of the body. I can not think that this disproves the local origin of cancer any more than to say that we find tubercular disease in the rectum in the man who

has a tubercular deposit in his lungs. The lymphatic system is very wonderful, and may be responsible for the migration of the micro-organisms, cells, or what not which produce the disease. Whatever may be the solution to these knotty problems, the thing of the most moment to us in dealing with growths about the rectum is to distinguish between the malignant one and the one that is not malignant. When this problem is solved we can consider the treatment.

CHAPTER XVII.

TREATMENT OF CANCER OF THE RECTUM.

THERE are but three methods to be considered in the treatment of cancer of the rectum: 1. Colotomy. 2. Extirpation. 3. Palliative treatment.

Colotomy.—In delivering the Bradshawe lecture before the Royal College of Surgeons, London, Mr. Thomas Bryant selected as his subject Colotomy. He said: "But, as a means of giving relief to patients with chronic intestinal organic ulcerations or obstruction from whatever cause, colotomy was generally, and indeed I may say is still, too much regarded as a *dernier ressort*, and as a consequence it was, as a rule, only carried out when all other measures had been tried and proved to be useless. This position I, in common with some few other surgeons, have, however, never accepted. We have regarded it as the best means the surgeon has at his disposition for the relief of rectal obstruction from cancers, and every disease which is not otherwise removable, and experience has proved that life may by it be saved when the disease is not cancerous, and prolonged even for years when it is so."

Turning to page 605 in Wyeth's excellent text-book on surgery, we read: "In stricture of the rectum, when all other measures fail, colotomy is the last resort."

Here are diverse views by two very distinguished authors. Which is correct? I am decidedly inclined to Dr. Wyeth's opinion (if colotomy is performed at all), and, although he has been content with the bare statement without argument, I shall in a few words give my reasons for differing from Mr. Bryant in his statement and proposition. I quite agree with

him in the preference given to lumbar over inguinal colotomy in cases of cancer of the rectum, and especially in cancer of the sigmoid flexure ; but I beg to differ as to the need of the operation, and I base my belief on the clinical facts as evidenced by the disease. Instead of admitting his premise that colotomy is called for in the relief of rectal ulceration, the result of cancer and other diseases, and should be performed early in the disease, I shall contend that such a procedure is warranted only in the rarest cases, and then as a *dernier ressort* only, which he denies. My conclusions are based upon an observation of several hundred cases of so-called obstruction of the rectum. I shall not found my objections upon the dangers that attend the operation, although every surgeon will admit that some danger attends it. I recognize the fact that under antiseptic surgery the mortality attending these, as well as all other surgical operations, is reduced. However, this admission plays no part in rebutting other arguments that are urged for the operation. I will be permitted to remark that, in my opinion, it has become too much the custom, or fad, to do this operation in cases where there is no possible chance of doing the patient any good. Indeed, it has become so common with some surgeons, that the moment cancer of the rectum is diagnosticated colotomy is done. Mr. Bryant states two distinct propositions—viz. : "1. The immediate success or failure of the operation turns but little upon the operation itself if well performed, but upon two main points, the first being the local condition of the bowel above the seat of obstruction, and the second on the general condition and age of the patient."

Some surgeon once said that the reason laparotomies for gunshot wounds showed such a low per cent of recoveries was, that too many were attempting the operation. Mr. Bryant can very well say that the immediate success or failure of colotomy turns but little upon the operation if it is well performed. The trouble is that, if his premise be true, this operation should not be considered as a last resort in cancer, but that it should be resorted to early in the disease, and is

the best of all procedures; too many men, accepting his dictum as true, will be doing the operation when less dangerous methods might accomplish the same results. As to his two main points to be considered before doing the operation: First, "the local condition of the bowel above the seat of obstruction." I take it that he means whether the bowel above the seat of obstruction is invaded by the disease, or if, in consequence of the disease *below* the seat of obstruction, the function of the bowel has suffered. In my opinion, it would have been more to the point to have considered the local condition of the bowel both *above* and *below* the seat of obstruction. He says: "If from procrastination serious intestinal changes have taken place before relief is present, recovery is hardly to be expected." I suppose, of course, that the distinguished author refers here to cancer, and not to non-malignant growths, as the "serious" cause of intestinal changes. Suppose the gut above the stricture was not invaded or changed at all, but that below the stricture there was a slight infiltration by cancerous deposit, is the operation justifiable? I certainly can not agree that it is. Admitting that there was considerable infiltration and a growth of some size, even then I could not admit that it was justifiable. No one can deny but that a colotomy is a loathsome and disgusting thing. Patients with cancer of the rectum live from three to six years. Many in my practice have lived five years after the disease was first observed, and in comparative comfort. Why subject these people to such an operation during the incipiency of the disease when it does not stop it? Again, are we quite certain that there is an infallible sign of cancer? I have already spoken of the great difficulty in deciding this question by the microscope, and even by the clinical history of the case. From quite a number of patients I have taken specimens from rectal growths, had them examined by a microscopist and pronounced cancer, whose subsequent history revealed the fact that it was not cancer at all. In a preceding chapter in this book I have so stated, and given a history of several cases. Then, too, in the early stages of cancer there

is not sufficient clinical evidence to base an opinion upon. Certainly for a benign stricture, growth, or obstruction in this locality, colotomy would not be advised unless it was impossible to remove the growth, and it was producing great obstruction. Again, if the disease be cancerous, whether it be incipient or confirmed, can the operation of colotomy cure it? It might be, as Mr. Bryant suggests, that the operation could be done much more successfully while the general health is in good condition, but it is not whether one can perform colotomy *successfully* or not, or whether the patient can stand the operation well or indifferently. The prime question should be, What good will it do? A surgeon may do a beautiful operation for stone in the bladder and get the stone, but the patient dies; or a woman may bear the operation for the removal of her womb when she is constitutionally affected by *sepsis*. In all candor I would ask, Can the establishment of an artificial anus in the side in any way arrest or cure a cancer in the rectum? If it is granted that the disease has already become a constitutional one by infection, regardless of the opening in the side, I would ask, Can the colotomy prolong the life of said individual? In no possible way can it do so, even to the minds of those who advocate the operation, but one, viz., by preventing one source of irritation—the passage of fæces over the cancerous mass—the argument being, the more irritation the more deposit. In my opinion, this proposition is of very little importance or consideration in dealing with cancer of the rectum. The increase of the growth that would occur by the local irritation excited by the passage of the fæces over it would, to my mind, be of very little moment to the patient; and, as a fact, malignant growths increase by an *inherent* power, deposition, infiltration, etc., more intrinsic than extrinsic. These growths will exist in the rectum a long time, acquiring a great size, involving, perhaps, the whole circumference of the gut before the mucous membrane is ulcerated, and frequently before any special pain is excited. Whereas I believe that local irritation has more or less to do with the increase of a

cancerous mass that is subjected to its influence, I have never seen much difference in cancers of the rectum, so far as rapid progress is made, before or after colotomy was done. As I have before stated, my patients have generally lived from four to six years without colotomy. Do they live any longer with colotomy? These patients die generally of sepsis, and the mass is left from which the infection takes place. In other words, can one say because colotomy has been performed, and the patient lives from four to six years, that colotomy was the cause of prolonging life? Again, it is claimed that by colotomy much of the pain in the rectum is relieved, because the fæces have been directed from their natural course. In some instances this may be true, but the rule will not hold good in all. I have known patients to suffer equally as much with pain after as before the operation. Nor is it always true that the fæces are diverted from their natural channel. In some cases, perhaps the fault of the operator, patients complain of discomfort from the fæces lodging along the route, or at least complain as much as they did before the operation was done. In a paper read by Mr. Jessop on the Treatment of Cancer of the Rectum, at the Leeds meeting of the British Medical Association, he said: "In cancer of the rectum the constriction in the majority of cases can be got over for a time by injections, the introduction of the finger or bougie, the use of laxatives, and the like." This has certainly been my observation. Indeed, I have seen many cases of cancer of the rectum where the patient never complained of constipation or obstruction. Add to this that many patients of the kind complain of but little if any pain, which is certainly true, especially if the growth is situated above the sphincter muscle; it lessens the cases materially which would call for colotomy. I can not agree with Mr. Bryant in his statement that the operation is demanded for the purpose of relieving the local distress, admitting, as he does, that when the disease is in the lower part of the rectum, obstruction seldom occurs. At one time I had seven cases of cancer of the rectum under observation, and in

but one was pain a factor at all. Admitting that pain is a prominent symptom, colotomy does not bring that radical relief which would justify its being done simply to meet this symptom. We have in opium a remedy which will quiet pain effectually, and if the argument be used that we would make an opium *habitué* of the patient, I would ask, What is the difference if he is to die so soon? Pain in cancer is inherent, caused by the local affection or pressure on the nerves, and is not controlled by extraneous circumstances; hence, of what account is opening the gut at a distant point if pain is not a great factor in the disease, and is not caused by the pressure exerted by the fæces? If it is admitted that the irritation and pain *are* caused by the fæcal mass—which I doubt—if there be a stricture, dilatation would materially prevent this pressure. Not long since I saw, in consultation, a lady whose lower rectum, including also the buttocks and labia, were involved in a cancerous growth, the gut for six inches tightly strictured, and when asked how much pain she suffered, replied: "Oh, very little," and said that the fæcal discharge caused her no pain. If, as some would have us believe, colotomy prevents the extension of the disease and its consequences, such as an involvement of the bladder, vagina, etc., I would ask, How is colotomy to prevent it? It is not the passage of fæcal matter over the affected part that causes this result, but rather the nature of the disease to infiltrate and break down the tissue. If a cancerous growth is situated *above* the sphincter muscles, its tendency is to extend upward, and in this event pain is not great unless some other organs are affected. It is not uncommon that patients come to my office to consult me for some trivial rectal affection, and I find upon examination a cancerous mass extending around the rectum, pain being scarcely a symptom. Of what value would colotomy be here? Hence I am forced to the conclusion that the operation is not warrantable, simply because cancer is found in the rectum, whether it be in an incipient or confirmed state; nor for the relief of pain simply, unless other complications exist, be-

cause we have medicine which will relieve pain ; nor to prevent invasions by the disease, because it would fail of its purpose. Infiltration and further pathological change can not be overcome by colotomy. Nor do I subscribe to the belief that the operation should be done for an existing obstruction or the anticipation of the obstruction in the *lower* rectum, because, as Mr. Jessop says, this obstruction seldom takes place, and if it does it can be relieved by dilatation and other methods. Nearly a year ago Dujardin-Beaumetz called attention to a plan of handling this disorder which, in his hands, had given results at least favorably comparable to surgical results.

He regards cancer of the rectum as ordinarily of slow growth, and its dangers to be partly the result of the intestinal obstruction which it produces, partly a poisoning from the absorption of the broken-down tissue of the tumor, and, lastly, the mechanical results of its pressure on the ureters. To limit the action of these factors, intestinal antisepsis is at least partially available. By irrigation of the bowel, the region of the tumor is kept clean, as well as the sacculated portion of the bowel above it. Stercoræmia from retained fæces is less liable to occur. For purposes of irrigation, Beaumetz uses a solution of naphthol—about four grains to the quart. Of intestinal antisepsis to be given by way of the mouth, he prefers salol and bismuth. To still further effect this object, laxatives are employed for the purpose of moving the bowels at least once a day. By the use of a diet of milk, eggs, fruit starches, and vegetables, the amount of material put into the intestinal canal, and capable of undergoing putrefaction and forming poisons, is much diminished.

Under the above plan of treatment he has found that the offensive discharge from the bowels has ceased, and the patients have gained in weight and strength. Lastly, I do not believe that colotomy should be done for obstruction in the rectum by cancer except in a few cases, and then only as a *dernier ressort.* I know that colotomy is advised and practiced by a few for other ulcerations besides those of cancer

of the rectum. Except under certain conditions, I would object to this procedure as much as to the indiscriminate performance of the operation for cancer.

Risk of Life.—I was in consultation a short time ago when colotomy was discussed for the relief of the patient, and I was surprised to hear one of the surgeons remark that it was a very *simple* operation. Mr. Cripps says: "Colotomy is an operation of great delicacy, requiring a good anatomical knowledge, with trained manipulative skill." Any surgeon in the habit of doing either one of the colotomies will bear me out in saying that the operation, especially if complicated, is difficult of execution and fraught with danger. In the eight years from 1869 to 1877 the number of colotomies which were performed at the two hospitals of St. Bartholomew's and Guy's amounted to thirty-nine cases with twenty-seven deaths, or a mortality of sixty-six per cent. Treves, quoting Erckelens's statistics, published in 1884, states that out of one hundred and ten cases of colotomy for cancer, forty-two died, a mortality of thirty-eight per cent. Of course it is to be admitted that in the hands of experienced operators, especially when the operation is done under strict antiseptic precautions, no such mortality as this would be recorded. Herbert Allingham, Reeves, Bryant, Kelsey, and others have reported a considerable number of cases, with a very small mortality. But this operation is very much alike in its results to that of abdominal section for the removal of the ovaries, tubes, etc.; it is being done by too many *inexperienced* hands. There can be no doubt that the heavy mortality list published by Erckelens was mainly due to badly selected cases, inexperienced operators, and the want of antiseptic precautions.

Method of Operating.—The question has been strongly mooted by distinguished surgeons as to which of the two colotomies is the better: the one done in the lumbar region and known as Amussat's operation, or the other, done in the inguinal region, and frequently called Littre's operation. Mr. Thomas Bryant is a strong advocate of the *lumbar* operation, and Mr.

H. Allingham and Reeves much prefer the *inguinal* method. The subject has been argued *pro* and *con* by these distinguished gentlemen for some time, but neither those on one side or the other have given an inch in the controversy. The chief grounds upon which the surgeons who prefer the inguinal operation base their argument are as follows: 1. That the iliac operation is in itself easier than the lumbar. 2. That by means of the abdominal incision diagnosis in obscure cases may be verified before the bowel is opened. 3. That by it there can be no possibility of the surgeon's mistaking the small intestines, duodenum, or stomach for the large intestine, and that abnormalities of the colon do not mean failure of the operation, since the abdomen can, by the inguinal wound, be carefully searched. 4. That the bowel can be readily drawn out of the wound, and consequently firmly fixed to the skin, without causing undue tension on the stitches. 5. That in lumbar colotomy there is frequently so much prolapse of the gut as to give rise to serious trouble. 6. That the inguinal position of the wound is far more convenient to the patient for cleanliness as well as for the adjustment of pads to guard against the escape of fæces and flatus.

Mr. Bryant deals with each one of these claims *seriatim*, and comes to the following conclusions:

"1. For the iliac operation to be a success, the large bowel should not be loaded with fæces, the abdomen be by no means tense, and the symptoms of obstruction far from urgent, since under opposite conditions (such as those too commonly met with) its supposed advantages would hardly be demonstrated. The searching for the bowel would, moreover, be a serious difficulty; the free manipulation, extrusion, or excision of the bowel which is advised would be unsafe even if practicable, and the necessity of having to open the bowel upon its exposure would, when called for, add to the dangers of the measure. The iliac operation, consequently, would appear to be applicable to only a small class of cases. If, then, it can be said that iliac colotomy is an easier operation than the lumbar when the large bowel is empty, the abdomen flaccid,

and the symptoms of obstruction unpronounced, it can without hesitation be asserted that, with a distended abdomen and colon and urgent symptoms, the lumbar operation is the simpler of the two.

"2. To search for the colon in iliac colotomy performed upon a patient with an undistended abdomen and free from all urgent symptoms may neither be difficult nor dangerous; but with the opposite condition, in which the bowel is damaged above the immediate seat of disease from prolonged obstruction, danger must exist, and such danger must be added to that which appertains to the peritoneal wound. In lumbar colotomy neither of these dangers has to be met. Such searching for extrusion and dragging outward of the colon as is considered to be essential in the iliac operation is never requisite, since the spur which is considered to be so essential to guard against the passage of fæces past the artificial opening in the iliac method can in the lumbar be obtained by far simpler means.

"3. The prolapse of the bowel at the artificial opening which has been adduced as an objection against lumbar colotomy does not rightly or of necessity belong to it. To judge by my own experience, it is imaginary. In the iliac operation the objection is admitted, and sought to be remedied by an operative measure which is in itself of far greater magnitude than any lumbar colotomy I have ever done or seen.

"4. The fear of an abnormity of the colon, rendering the operation of lumbar colotomy a failure, is practically groundless. I have known it to occur but once in my own practice, and in that case the patient suffered no harm. Such a fear, therefore, need in no way tell against the lumbar measure.

"5. The greater convenience of the iliac over the lumbar wound for toilet purposes may, at first sight, seem plausible, but this apparent advantage is more than counterbalanced by the greater difficulty that exists in keeping any dressing or compress in position over the anterior opening, to prevent the escape of the intestinal contents, than is ever experienced over the lumbar.

"6. The final conclusion is therefore clear, that iliac colotomy is not yet proved to be superior to the lumbar operation. In doubtful cases in which an exploratory incision is required for diagnostic purposes it may be useful, but such cases are very few. In all others lumbar colotomy has advantages which stamp it as the better measure. The single advantage that I can see in the adoption of the iliac method is that the question of operative interference will have to be taken into account at a far earlier period of the patient's trouble than it has been hitherto the custom to consider the propriety of the lumbar operation; if so, we may soon see the valuable operation of lumbar colotomy take its right place in the practice of surgery, and good may come out of a fashion which has certainly not been a universal success."

I am much inclined to believe with Mr. Bryant in the majority of his conclusions. I am cognizant of all that is said by those who do inguinal colotomy in preference to the lumbar operation in regard to the perfect safety of opening the peritoneal cavity under aseptic precautions; nevertheless, it can not be gainsaid that it is more dangerous to open the peritonæum than *not* to open it, even with these precautions. I know, too, that it is strongly asserted, especially by Allingham, Jr., that in doing a lumbar operation the peritonæum is often opened. Notwithstanding what he and others have said, I believe that I can tell when the peritoneal cavity has been opened in doing the lumbar operation, and such a result has not occurred in my experience, and in Mr. Bryant's one hundred and seventy cases of lumbar colotomy the peritoneal cavity was opened but twice. It is urged in favor of the iliac operation that there can be no possibility of the surgeon's mistaking the small intestines, duodenum, or stomach for the large intestine. It would be just as well to say that it is dangerous to attempt to ligate internal hæmorrhoids because of the possibility of mistaking the prostate gland for a pile. A surgeon who could not distinguish the stomach from the colon ought not to attempt a colotomy. Another strong objection to the iliac operation is, that if cancer be located in the

upper rectum or sigmoid flexure, it may soon embrace the opening made in the inguinal region. The lumbar operation being done on the colon at a greater distance from the diseased part, is not so apt to be embraced by it. I have not the time or disposition in this chapter to argue further the *pros* and *cons* of this much-mooted question, nor can I see that it would be of any practical value to my readers. I think Mr. Bryant has met all the objections against the lumbar operation, and I quite agree with him when he says "iliac colotomy is not yet proved to be superior to the lumbar operation"; and while I must agree with those who favor Littre's method when they say that it is easier of execution under most circumstances, I would suggest that this is no argument in its favor.

Manner of doing the Inguinal Operation.—In doing a colotomy it is necessary to observe all the rules of asepsis. Although the operation is for the relief of a disease which has a discharge of pus, etc., and may be considered already septic, we are going to deal with a part that is *not* contaminated, and therefore it is necessary to prepare the patient for the operation. The evening previous the bowels should be moved thoroughly. On the morning of the operation an enema of hot water should be given, and the patient advised to take a hot bath. Having observed the precaution to do without the preceding meal, he is ready for the operation. Having a good light, and all preparations concluded, the patient is put upon the operating table, the abdomen, inguinal region, and surrounding parts are sponged off with ether, and, if necessary, the hair is removed with a razor. The surface of the body surrounding the part is covered with dressings which have been sterilized. The instruments are in a solution of carbolic acid (three per cent), and the operator and his attendants thoroughly aseptic. It must not be forgotten that we have to deal with the *peritonæum* in this operation. I like the manner in which the incision is made by Cripps, which is a little higher than that made by most operators. An imaginary line is taken from the anterior su-

perior spine to the umbilicus; the incision, two inches and a half long, crosses this at nearly right angles and an inch and a half from the anterior spine; consequently, half the incision is above and half below the imaginary line, as shown in the cut.

Shows the line of incision adopted by Harrison Cripps for inguinal colotomy. An imaginary line is taken from the anterior superior spine to the umbilicus. The incision, 2½ inches long, crosses this at nearly right angles at 1¼ inch from the anterior spine.

In making the incision, the skin should be drawn a little inward, so as to make the opening somewhat valvular. The peritonæum being reached, it is pinched up by fine forceps and an opening made sufficient to admit the finger. The intestines being protected by the finger, the peritonæum is divided by scissors to nearly the full length of the cutaneous incision. The colon may now at once show itself, and can

easily be recognized by its longitudinal bands and by the convolutions of its surface. Often the large intestine will present; at other times the small intestine, omentum, or mesentery will first appear. If they do, they should be pushed back and the colon sought for. It can often be detected by the scybalous masses within it, or it may be traced by the finger after passing it into the pelvis, feeling for it as it crosses the brim. Some difficulty is sometimes encountered by the small intestines protruding, but these should be carefully returned into the abdominal cavity. The colon being found, a loop of it is drawn into the wound. In order to avoid the prolapse which is likely to occur if loose folds of the sigmoid flexure remain immediately above the opening, gently draw out as much loose bowel as will readily come, passing it in again at the lower angle as it is drawn out from above. In this way, after passing through one's fingers an amount varying from one to seven inches, no more will come. Two provisional ligatures of stout silk are now passed through the longitudinal muscular bands opposite the mesenteric attachment. These provisional ligatures, the ends of which are left long, help to steady the bowel during its subsequent stitching to the skin, and, moreover, are useful as guides when the bowel is ultimately opened. They should be about two inches apart. The bowel is now temporarily returned into the cavity. With a pair of fine forceps the parietal peritonæum is picked up and attached to the skin on each side of the incision, the muscular coats of the abdominal wall not being included. Four sutures of fine Chinese silk are sufficient—two on each side, an inch and a half apart. The bowel is again drawn out and fixed to the skin and parietal peritonæum by seven or eight fine ligatures on each side, the last suture at each angle going across from one side to the other. The bowel should be attached so as to have two thirds of its circumference external to the sutures. By turning the bowel slightly over, the lower longitudinal band can be clearly seen, and it is best to pass the sutures for the lower side through this, since it is a strong portion of the gut. The up-

per longitudinal band, through which the provisional ligatures have already been passed, is seen in the middle line of the wound. The bowel being now turned downward, the opposite line of sutures are inserted close to its mesenteric attachment. No longitudinal band can, however, here be seen. The sutures of silk are passed by small, partly curved needles, the needles passing through the skin, one eighth of an inch from the margin, then through the parietal layer of the peritonæum, and, lastly, partly through the muscular coat of the bowel, great care being taken to avoid perforating the mucous membrane. It is easier to pass all the threads before tying them up. The wound should be most carefully and gently cleaned. The threads can then be all tied with moderate tightness. If the case is urgent, the bowel may now be opened ; if not, a piece of green protective is put over it—a necessary precaution to prevent the granulations adhering to the gauze. The whole is covered with an antiseptic dressing, an additional thick pad being placed over the site of the wound. A broad flannel bandage is then wound firmly around the abdomen so as to insure considerable pressure.

Different operators have employed different plans in doing this operation, and therefore I shall mention several others in connection with this, that the special points may be observed. Luke commenced the operation by making a perpendicular incision in the groin, four inches long and just outside the course of the epigastric artery. The sigmoid flexure was sought for and pulled into the wound, the gut being opened at once. This plan, however, has gone out of use. Reeves makes the usual incision in performing the operation—viz., one an inch above Poupart's ligament, extending from a point just external to the abdominal ring to a little below the anterior superior spine of the ilium, the incision being between three and four inches in length. Sutures are passed through the gut to fasten it to the skin.

As I am very fond of the manner in which Herbert Allingham does the inguinal operation, and have taken occasion to practice it a number of times, I beg to use his own words in

describing his operation: "The manner in which I now perform the operation is by making an incision two inches in length, about one inch inside the anterior superior spine of the ilium, and parallel with Poupart's ligament. The abdominal muscles are divided, and bleeding stopped. On reaching the peritonæum, a small incision is made into it and the cut edges taken hold of with clip forceps and held up by the assistant. Scissors are then used to cut through the peritonæum to the size of the wound. The reason I clip the peritonæum is to prevent its slipping or being pushed away. Also, when held up, it stops any oozing of blood from the cut muscles passing into the abdomen. A flat sponge with a string attached, to prevent its being lost in the belly, is next introduced to keep the intestines out of the way, and to catch any blood that might otherwise drain into the abdomen while the parietal peritonæum is being carefully sewed with interrupted, fine carbolized silk or catgut to the skin all round. By joining the skin and peritonæum in this way, rapid healing takes place, and the chances of any discharge finding its way into the peritoneal cavity are lessened. The sponge being removed, a search is then made for the sigmoid flexure. In three of the cases it bulged into the wound, and was easily recognized by the longitudinal bands and *appendices epiploicæ*. When the large intestine does not present itself, I pass my first finger into the abdomen, sliding it over the iliacus muscle until I arrive,at the intestine, which I hook up to the opening with my finger and thumb. If this manœuvre fails to find the gut, I search toward the sacrum, feel for the rectum, and trace the gut up. Should this not succeed, the finger must be passed upward toward the kidney, and the descending colon felt and traced downward. When the gut is found and brought to the surface, I look for a piece with a sufficient mesentery by passing the gut through the fingers. Of course this can only be done if the disease is in the rectum or the lower part of the sigmoid flexure. Generally the part of the sigmoid first pulled up has quite sufficient mesentery. If it is fixed to the back of the abdomen, there being a very

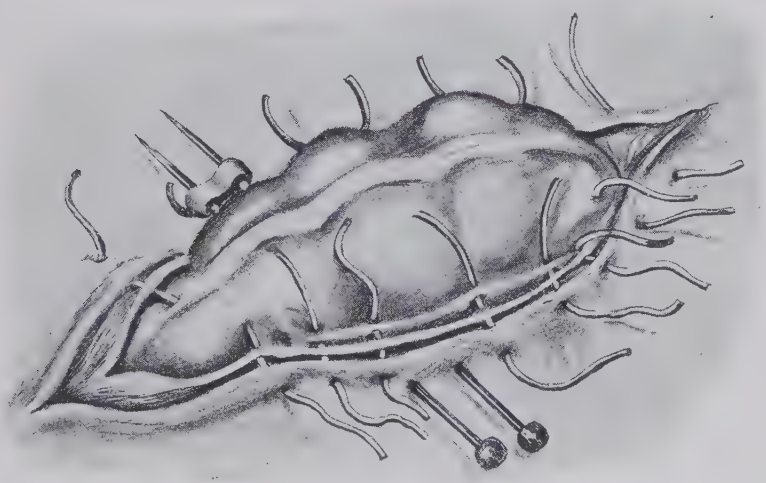
short mesentery, I pull up as much of the gut as possible and stitch it to the wound, so that the intestine when opened (some days later) looks like the orifices of a double-barreled gun. This appearance is obtained by introducing the suture in the following way: A needle threaded with carbolized silk is passed through the mesentery close to the intestine, then through the abdominal wall on both sides at the middle of the wound, and the sutures are tied up tight. If there is little or no sigmoid mesocolon, I am obliged to pass the suture through the muscular and serous coats of the gut at its posterior part. Leaving a fair-sized knuckle of loose gut outside of the wound, I next sew the gut all around to the skin, passing the thread only through the muscular and serous coats. This is done very carefully, so as not to prick the mucous coat. Antiseptic dressings are then applied, pads being placed over the opening, so that if there is any vomiting the gut may not break away from the sutures." My friend, Dr. Leon Straus, after seeing much of this work in Europe, believes in and extols Mr. Herbert Allingham's operation.

The operation as done by Kelsey is described as follows: "An incision about two inches and a half long is made in the left groin, parallel with Poupart's ligament, about half an inch above it and well toward the lateral wall of the abdomen, so far that the epigastric artery should not be seen in the operation. This incision is carried down to the peritonæum, each successive layer being divided on a director, as is usual in operations on this part. Before the peritonæum is opened, all hæmorrhage from the wound should be stopped and the cut rendered as clean and dry as possible. The peritonæum is then pinched up with forceps and nicked, a director is introduced, and the opening enlarged to the extent of an inch and a half. The descending colon should be in view immediately below the wound, and is recognized by the usual signs. When such is the case, the subsequent steps of the operation are comparatively simple, the incision into its wall and its union to the abdominal wound being accomplished in the same manner as in the lumbar operation; but

when such is not the case, the bowel must be searched for, and it may be necessary to enlarge the original incision. The operation may be modified with advantage by stitching the parietal and visceral layers of the peritonæum together, with sutures passing down to the submucous layer of the bowel, but not into its caliber. The wound may then be covered, and the opening into the bowel delayed from six to eight hours for adhesions to occur."

The Author's Plan.—In some respects, especially the fixing of the gut, the plan which I have employed differs somewhat from the authors that I have quoted. The first main point to be remembered in the operation is to escape the branches of the epigastric artery, and hence I make my incision higher than has been advised, save, perhaps, by Mr. Cripps. Indeed, I have never seen why we should not go just as high up the colon in making this incision as we might desire. If the gut is not found in cutting down at the usual site, of course there is no reason why the incision should not be carried higher up; but I much prefer to make the original incision high enough at first to meet these demands. As a guide I take Cripps's imaginary line, which runs from the anterior superior spine to the umbilicus, and make an incision two and a half or three inches long, which crosses this line at right angles at about an inch and a half from the anterior spine. To those who are not in the habit of operating it is very well to mark this line with iodine, that it may be seen. Cripps has half the cut above and half below the imaginary line. I have found that by having the incision one third below and two thirds above this line meets the indication better. When the peritonæum is reached I am careful not to tear it; therefore, catching it up by forceps, I nick it just sufficiently with a knife to allow a fine-pointed scissors to enter it; by which it is divided the full length of the cutaneous incision. I do not admit my finger into the opening that is nicked, but lay it open in the manner described. I believe that the proportion is greater than one third that the large intestine presents itself; but very often the small

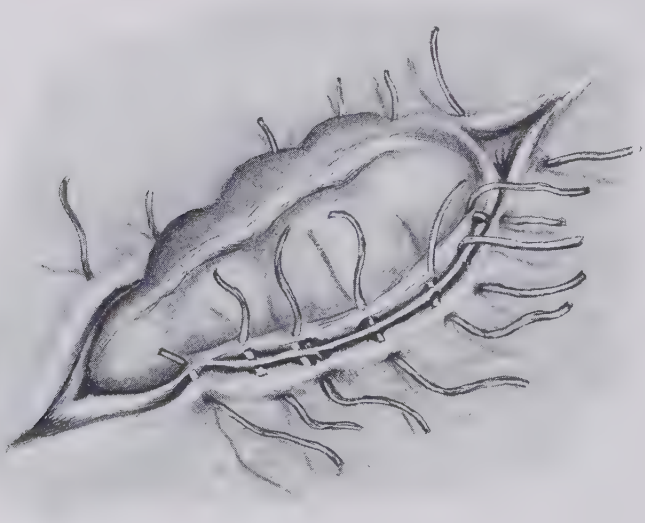
intestines present, and the colon is only detected after a rigorous search. In many instances it is found up near the navel. There is but little difficulty experienced in detecting it, for its longitudinal bands and its convoluted surface readily indicate it. Having found the colon, I draw it up to the wound by means of my finger and thumb hooked under it, and I believe in drawing as much loose bowel as will come out without any force being used, and rapidly passing it again back into the cavity at the lower angle of the wound. During this act of passing the gut through the fingers a piece with sufficient mesentery should be sought. Now, instead of passing "a needle threaded with carbolized silk through the mesentery close to the intestines,"



Inguinal colotomy. (After Mathews.)

I pass *two* delicate but stout steel needles, made for the purpose, through the abdominal integument on one side, then through the mesentery close to the intestine and out of the abdominal wall on the other side, catching only enough of the true skin to insure a smooth surface. For a time I used only *one* such needle, but I thought by passing *two* very close together, about a quarter of an inch apart, a better spur was obtained. These needles are made about five inches in length,

with a heavy blunt end at one extremity, and, after they have passed through in the manner described, they are secured by drawing the parts as tightly as desired, and then pressing a bullet upon them at the other extremity to insure their remaining in position. This idea was obtained by seeing Kelsey use, for a similar purpose, a silver wire in doing an inguinal colotomy. He did not claim priority in the use of it, nor did I hear him say to whom he was indebted for the suggestion; but in talking to my friend Dr. W. T. Bull



Inguinal colotomy. (After Cripps.)

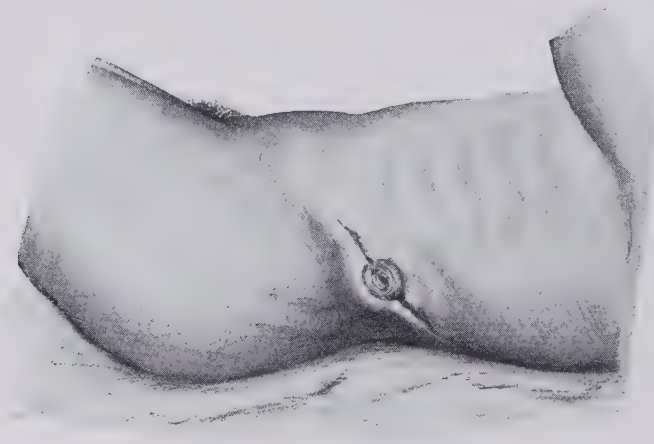
afterward, he mentioned that he had upon one occasion adopted a similar method. When these pins have been secured the operation is practically completed, but the precaution is observed to sew the gut to the skin with several sutures. It is very well, also, to stitch the two angles of the wound. A piece of rubber cloth is now laid over the wound, and iodoform gauze over this, and a moderately tight bandage is made to encircle the abdomen, to meet such symptoms as vomiting and great distention and prevent the breaking of stitches. After eight to twelve hours the exposed intestine is fixed firmly to the abdominal wall by lymph, and the gut can

be opened then if necessary. Herbert Allingham says that there is generally a large quantity of gut, or rather walls of the gut, on both sides of the incision. This he removes by cutting it away until the edge of the gut is nearly on a level with the skin. This is quite a good idea, and yet if the advice is adopted too indiscriminately, the mistake might be made of cutting away too much, for the walls will shrink to a certain extent. Patients after the operation are able to walk around the house in a few days.

Condition of the Patient after Operation.—There is no use in denying the fact that the condition of a patient after an operation for colotomy, either by the inguinal or lumbar method, is a disgusting one. Nature never intended any such outlet, and, granting that the fæces are voided without trouble, the fact that the opening is in an unnatural place is enough to cause a mortification on the part of the patient. Cripps says, to suppose that a patient after colotomy is in a miserable condition is a delusion. It depends very much upon what can be termed a "miserable condition." I think that one can be rendered just as miserable mentally as physically, and, although the fæces do not constantly run away from the opening, the mind is constantly dwelling upon the fact that there is an unnatural outlet for the fæces. Therefore I wish to impress upon the reader's mind again the absolute importance of describing the operation and its results to the patient before it is done. I have seen patients upon whom colotomy had been performed who said to me: "How long will it take for this opening to heal?" meaning how long would it take to close entirely. And this leads me to remark that all attempts at establishing an anus at the natural site after colotomy are attended with danger. To say the least of such attempts, they are, in the vast majority of cases, unsuccessful. Although I do this operation when I think it is imperatively demanded, yet after each one I question myself whether it should have been done at all. Lately, while the guest of my friends Drs. John A. Wyeth, W. T. Bull, and other distinguished surgeons in New York, I found that with

them the operation of colotomy was in great disfavor, and that they seldom practiced it. Senn speaks discouragingly of it. Therefore I can do no better than to urge upon all those who contemplate doing the operation to weigh with care the opinions of these distinguished men.

Method of doing Lumbar Colotomy.—Allingham, Sr., gives some most excellent points in doing the lumbar operation; therefore I shall take the opportunity of quoting from his work: "When about to operate, the patient should be placed upon a hard couch, in the prone position, with a slight inclination toward the right side, and a hard pillow is to be adjusted under the left side, so as to render the loins tense and prominent. Having by measurement found the place at which to make your incision (with its center quite half an inch posterior to midway between the anterior superior and posterior superior spine of the ilium, and midway between the last rib and the crest of the ilium), the structures should be very carefully divided, and this should be done



Lumbar colotomy.

slowly and deliberately, waiting until bleeding is arrested, so that the anatomical relation of the parts may be duly recognized as the operation proceeds. I think it very desirable, though not absolutely necessary, that the fascia lumborum should be thoroughly made out, and, if possible, the edge of

the quadrator lumborum muscle clearly exposed. If this is seen, a sharp-pointed bistoury should be passed beneath it and the muscle freely divided. When this is done the colon may be found. It is generally covered by fat, which may be mistaken for the gut; but this error will be soon discovered, and is very easily rectified. It is of the utmost importance that the deeper incisions be kept the same length as the cut through the skin. If you do not attend this rule, by the time you reach the lumbar fascia you will be working in a deep triangular hole, the apex of which is farthest from you, and it will be almost impossible to find the gut, even if you have come down on the right spot. From personal experience, and the many operations I have seen performed by other surgeons, I am quite convinced that this is the secret of overcoming one of the difficulties of the operation. After exposing a piece of intestine, and failing to see a longitudinal band, I make a small incision in the peritonæum, and convince myself, by finding a band, that it is the large intestine. The posterior part of the intestine is then taken hold of, drawn to the surface of the wound, the gut being pulled out as far as possible, so as to obtain a good spur, and carefully stitched with interrupted sutures all round to the edges of the skin without perforating the mucous lining. The intestine may then be left unopen for some hours or, if necessary, opened at once, provided it is carefully attached at every point to the surrounding edges of the wound."

The after-treatment of lumbar colotomy is about the same as that of inguinal colotomy. I have stated that the former is the favorite operation with me in the majority of cases where colotomy is demanded. I shall not argue it further here, but in the chapter on disease in the sigmoid flexure it is again referred to.

In a paper read by me before the Ninth International Medical Congress, which convened in Washington in 1887, I took exception to colotomy as a means of treating cancer of the rectum. In that paper I said: "It is after a careful survey of all the reasons advanced by those who advocate co-

lotomy in cases of cancer of the rectum that I am constrained to differ from them, and to say that I do not believe that the operation is justified in these cases except under the rarest circumstances, if at all."

I am still of the same opinion. Too many people are being subjected to this horrible and disgusting operation that could be benefited equally as much by simpler means, for, as I have tried to demonstrate, the operation in itself promises but little, and is rarely called for.

My conclusions in that paper before the congress were as follows: 1. I do not believe that colotomy is justifiable in cases of cancer of the rectum proper except in the rarest instances. 2. In strictures or obstructions of the rectum, from whatever cause, located within three inches and a half of the external sphincter muscle, colotomy should not be done. 3. The operation is not warranted in cases of ulceration of the rectum (unless of specific origin) and accompanied by strictures, located three inches and a half above the sphincter muscles. 4. I do not believe that in congenital occlusion of the rectum the operation is advisable, except by consent of the parents after the nature of the operation is explained. 5. In cases where the operation is looked upon as a *dernier ressort* I do not think it should be performed except for *total* obstruction located above the point mentioned, and the growth not malignant. 6. When the rectum or sigmoid flexure is totally obstructed by syphilitic deposit, colotomy is advisable.

It can not be gainsaid that the consensus of opinion with surgeons in this country, if not in Europe, is in favor of inguinal colotomy in preference to the lumbar operation. Nor can it be questioned that the former is much easier to perform. I have done the inguinal operation seven times since the first edition of this work was published, in the class of cases of which mention has been made.

CHAPTER XVIII.

EXTIRPATION AND PALLIATIVE TREATMENT OF CANCER.

The treatment by excision of the growth in cases of rectal cancer is not a new one. Lisfranc was among the first to recommend it. Others followed, not only doing the operation, but speaking favorably of it. No doubt in the first instances the operation was done in a crude way, for Velpeau afterward modified the operation very materially, but it fell into disuse, and not until Marchand published his work on the subject, in 1872, was much interest taken in it by modern surgeons. Sir James Paget did much to revive the operation. In America, Roberts, Kelsey, Bull, and others have done a great deal in having it classified as a legitimate operation of surgery. Like all other surgical operations, it has been overdone, and the statistics have shown a fearful mortality. Billroth, especially, has shown what a dangerous operation it is. I take it that the great mortality is from the indiscriminate manner of doing the operation, and not from the operation itself. We seldom see cancer of the rectum until it has progressed so far that gland involvement and a general constitutional infection has taken place. Therefore the question of the utmost importance in consideration of the operation is the selection of cases. Like many other operations upon which discredit is thrown, it has not received that proper consideration from the profession which its importance demands, simply because the results shown have been very bad. If, however, we can see a cancer of the rectum in its incipiency, in an otherwise healthy subject—one that is able to bear the shock, etc., incident to so grave an operation—then I consider the extirpation of the growth, or, more properly

speaking, the excision of the rectum, as a perfectly legitimate and justifiable operation. Of course a very careful examination should be made of the parts and also of the patient's general condition. It may be not only that the operation is unwarrantable because of the pathological change in the rectum, but the anatomical bearings have to be considered. For instance, if the neighboring organs are implicated, such as the uterus, the vagina, prostate gland, etc., it is beyond question that such a condition will intimidate us in the consideration of the removal of the growth. I have seen two cases lately that will illustrate my point.

Sarcomatous infiltration of rectum, producing long tubular stricture. (Ball.)

Case I.—A young lady actress was referred to me by a physician friend of this city. She gave me this history: About three years ago she complained of great pain in the rectum, with some swelling around the anus. A physician was called, who made an examination, and told her that it was necessary to open a small abscess that was pointing inside the gut. This he did, but very little pus escaped. The swelling rapidly increased until the end of one week, when he informed her that she had a large rectal abscess which he proposed to open. This he also did, making his cut externally. From this cavity a great amount of pus was discharged, and she was confined to her room for three or four weeks. After the lapse of several months she was told that she had a fistula, the result of the abscess, and she was advised to go to an infirmary, where the operation for fistula with the knife was done. She is now filling an engagement in this city with a theatrical troupe, and, as I have said, came to

consult me, with the following symptoms: She prefaced by saying that she did not think the surgeon had done a good job in curing her of fistula, for she still had a discharge from her rectum, attended with pain which was aggravated by defecation, and that she had a harrassing straining at stool; that she passed a good deal of mucus, some blood, and that she was compelled to wear a pad of cotton to prevent the staining of her linen by the discharge. I was inclined, from this description of hers, to believe that she had an unhealed fistula, and, in placing her upon the table for an examination, supposed I would find that state of affairs; but, to the contrary, I found a good cicatrix, which resulted from the former wound, and without any evidence of a sinus existing. I then anointed my finger and introduced it into the rectum, more for the purpose of finding an internal opening of the fistula, if such an one existed; but, to my surprise, my finger came in contact at once with a hard, nodular growth situated in the septum and extending up for four or five inches. Upon further questioning her, she stated that in her straining effort at stool, what she took to be the womb prolapsed to such a degree as to be seen outside of the body, but, upon further investigation, I ascertained that it was the posterior wall of the vagina. Examining, therefore, this growth through the vagina, I found that it filled a large space in both the rectum and vagina, in the shape of a half-oval tumor. The uterus was fixed by plastic infiltration. Seeing that the patient had no idea of the enormity of the trouble, I advised her to finish the theatrical engagement at the earliest possible date, and to return to her home in Boston, when I would give her a letter to a surgeon of that city who would look after her case.

Case II.—The second case was in consultation with Dr. Krim, of this city, and was seen a couple of hours after the first one. A woman, forty-nine years of age, weighing about one hundred and forty pounds, this being her usual weight, had complained of an obstruction in the bowel, with a difficulty in having an evacuation. She said that very often she

felt a sharp pain dart through her back or abdomen, but it was gone in a few minutes; that she strained greatly at stool, but never had a well-formed action. Outside of these symptoms she was in a comparatively good state of health, although she traced her symptoms as far back as six years. Dr. Krim had already told me of the location of the tumor in the rectum, and, upon my inserting the finger, it was just as he had stated—located in the septum, and extending up the bowel five or six inches. Although this tumor could, to a certain degree, be circumscribed, its anatomical bearings were such as would not warrant its extirpation. We both agreed, therefore, to tell the husband of the condition that existed, and put the woman under palliative treatment.

These two cases were very similar in nature, affecting very much the same parts of the rectum, both embracing the vagina and uterus in the disease. Had only the lower portion of the septum been involved in either case, I would have been inclined to extirpate the growth, for I am sure that such implication does not contra-indicate the operation; but a cancer of the rectum involving its dorsal aspect is more favorable for the operation by excision that when situated in front. It must be remembered that in doing the operation of excision for cancer in or around the rectum, a half-way operation does no good at all, but, to the contrary, a great deal of harm. Suppose, for instance, that in either one of the two cases just cited I had removed a portion of the septum which contained the major part of the tumor. With the septum gone, the sphincter muscles interfered with, and a great wound resulting, the patient would have considered herself in a far worse condition than when she came to me, for in neither case were there very pronounced symptoms, and both patients were at the time able to attend to their regular duties, one as an actress and the other as a housekeeper. Any surgeon will see at a glance how absurd it would have been to have done a colotomy on either one of these patients. There was no obstruction to the passage of fæces, and no particular pain; and yet I am sure that colotomy has been done on just such cases. Mr.

Cripps, in the tables appended to his Jacksonian essay, records the following mortality: Out of fifty-three cases of excision of the rectum, forty-four recovered and nine died, giving a mortality of about seventeen per cent. Kelsey, from a collection of one hundred and forty cases, gives one hundred and eighteen recoveries and twenty-two deaths, being a mortality of about nineteen per cent. Billroth reports his cases at forty-five, with nineteen deaths, being over forty per cent mortality. Cripps has operated himself in thirty cases, with twenty-eight recoveries and only two deaths, a mortality of less than seven per cent.

The difference in mortality, as recorded by Cripps and Kelsey, opposed to that of Billroth, must be due to the selection of cases in the reports of the two first-named gentlemen, and an indiscriminate collection by Billroth, for we are well aware of the distinguished surgeon's ability. It is very well to consider under this head the causes of death, and I can do no better than to quote from Billroth's cases, viz.:

Peritonitis	15	20
Cellulitis	5	
Septicæmia	4	
Erysipelas	3	
Exhaustion	4	
Hæmorrhage	1	
Not stated	1	
Total	33	

Now, it will be observed that fifteen of these deaths were from peritonitis, five from cellulitis, four from septicæmia, and three from erysipelas, making a total of twenty-seven. In other words, twenty-seven deaths out of thirty-three occurred from septic infection, for all of these can be so called, not to speak of the four reported as occurring from exhaustion, which were possibly also septic. The question naturally arises here whether a thorough and rigid antiseptic operation was done in each of these, and if not, how far would it have gone in preventing death by averting septic infection. Of

course it is to be considered that we are dealing with an already septic *local* condition if not with a general one. In any event, however, it should never be forgotten that the necessity for an antiseptic operation here is imperative. In so formidable an operation a thought of grave consideration is, how much is the patient to be benefited by it, granting that he survives the operation? In Cripps's Jacksonian essay forty-four cases of recovery from the operation are recorded; the subsequent history, however, is not given in sixteen of these cases. The results are given for the remaining twenty-eight, and are as follows: Three of these were deducted from the nature of the disease being doubtful. Of the remaining twenty-five cases no recurrence had taken place in eleven instances, after intervals varying from a few months to some years. In three of the cases over four years had elapsed without recurrence. In the remaining fourteen cases recurrence took place after intervals varying from four months to three years. In some of these the recurrence was of a very trivial nature, and was easily removed by a second operation, while in others the patient died of a general cancerous cachexia. In Kelsey's statistics, out of one hundred cases which recovered, six cases are reported as permanent cures, in which there had been no return in ten years. Now, if we were to come down to a close investigation of these reported cases, we might suggest, with a certain degree of plausibility, that perhaps in the forty cases of recovery reported by Cripps, sixteen cases, whose subsequent history was not reported, died of the disease. Out of the remaining twenty-eight cases three were deducted, because the nature of the disease was doubtful; therefore, giving the patient the benefit of the doubt, it might be inferred that they were not cancer. Out of the remaining twenty-five cases no recurrence had taken place in eleven instances after intervals varying from a few months to some years. Now, a few months extends all the way from two months to twelve, and if patients are to have a recurrence of cancer in "some months," whether it be two or twelve, we must admit that

the operation was of doubtful propriety, because the patients would have lived that length of time, and perhaps longer, without any operation. In three of the cases only, after four years had elapsed, was there no recurrence. Cripps does not say at what stage of the disease the operation was done in these three cases, but we are to suppose that they were cases which admitted of an operation, without any serious anatomical complication, and certainly without constitutional infection. Well, it will not be denied that patients often live from four to six years after cancer has developed in the rectum. So, as far as the saving of life was concerned, the operation in these cases did not do it. In the remaining fourteen cases recurrence took place after intervals varying from four months to three years. The same line of argument can be used here as that in reference to the *three* cases mentioned. True, it can be said that in the interim between the healing of the wounds after the operation and the recurrence of the cancer these patients enjoyed an immunity. I would ask, an immunity from what? I have already cited a number of cases of pronounced cancer of the rectum where pain was not sufficient to complain of, and the distress was not great enough to prevent the ordinary enjoyment of life. Now, when we consider that in this operation, as performed by Cripps, there was serious injury done to the sphincter muscles, perhaps resulting in incontinence of fæces and the inability to control the gases, perhaps the destruction of a portion of the septum of the female—things which follow as a necessity after these operations—I must confess my inability to see or understand the advantages derived from it. In Kelsey's statistics, out of one hundred cases which recovered (from the operation, I suppose he means), six cases are reported as permanent cures, in which there had been no return for ten years. Besides these, in twenty-four other instances the patients were alive and well, without sign of return, at intervals varying from one to six years after the operation. I remember once in discussing the injection plan of hæmorrhoids, where a physician was claiming that he had

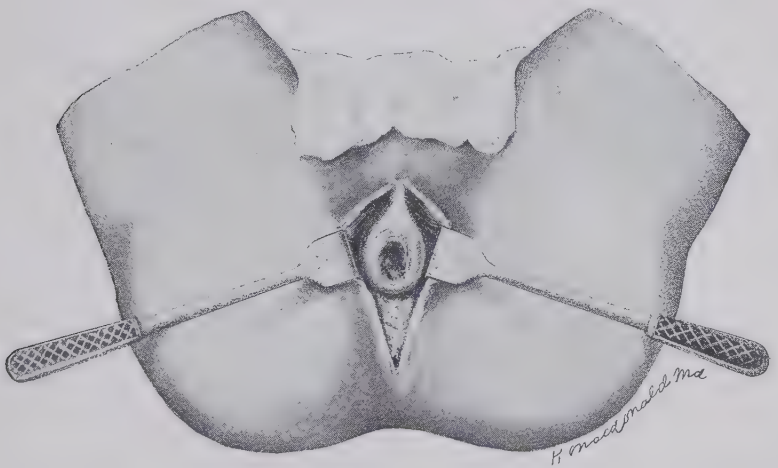
cured quite a number of cases by it, I asked him how he knew that they were cured, and he replied that there had been no further protrusion. I then asked him if he had examined the rectum to see whether there were any tumors then existing. He replied that he had not. Now, in the statistics that I have just quoted, where patients are said to have been alive without sign of the return of the disease, it might be asked were these patients examined carefully during said interval to find out whether there was any return or not? We know very well that an ulceration, benign or malignant, can exist above the sphincter muscle, and give very little evidence of its presence.

It will be seen, then, that the operation does not hold forth any great inducement, and a surgeon should consider well his case before undertaking it. Cripps says: "When compared with operations for malignant disease undertaken in other parts of the body, excision of cancer from the rectum gives at least as good results."

I certainly can not coincide in this belief. Of all parts of the body, the most difficult from which to remove a cancer is certainly the rectum. Its intimate relation with the other organs, its location in reference to cellular tissue, its peculiar office, together with the fact that the operation has to do with the function of the sphincter muscles, all go to make up a difficulty which is hard to surmount. In addition to this, we are to consider that it is sometimes an impossible thing, even with the scrutiny that we can command, and with the finger as a guide, to determine whether a nodule or an infiltration does not exist higher up the gut than the portion excised. If such does exist we must admit that the operation, in so far as saving life, is a failure. Certainly it is much easier to determine this question at other points, and certainly a more radical operation can be done for growths on the external portion of the body than on those in a cavity like this.

Plan of Operation.—The plan of operation has been much discussed by surgeons, but my experience in removing

growths from the rectum, or, more properly speaking, of extirpating the rectum, has taught me that no one special plan can be followed. Between that of the German surgeons of removing the entire rectum up to the sigmoid flexure, and the English surgeons of restricting the operation to a very limited extent, I believe that a middle ground can be established and practiced, based upon a true pathology. It is an axiom in surgery that in operating for cancer the *whole* growth must be removed, together with the *glands* that are involved. Let us take this axiom as our guide in rectal surgery. If the growth extends beyond the point where it is prudent to operate, it is best not to attempt its removal.



Excision of rectum. (Allingham.)

Cripps makes the point that the operation is of doubtful propriety when the disease involves the upper part of the recto-vaginal septum, where it is covered with peritonæum. I do not consider this injunction as meaning that it is so dangerous to open the peritonæum, but that this membrane being involved in the disease renders the operation useless. If there is no fear of the invasion of the peritonæum, an admirable operation is afforded by Kraske's suggestion, enabling us to remove much of the length of the rectum. The chief argument in favor of his operation is that the entire length

of the rectum can be removed without disturbing the sphincter muscles. Incontinence of fæces, the result of injury to these muscles, is the one great objection to any other mode of operating. Kraske's operation is admirably suited to cancerous tumors of the rectum. It consists in resecting the diseased part through an opening made at the left side of the sacrum. This operation of course is only applicable in a certain class of cases; for instance, when the sigmoid flexure is involved it would be of no use. If the operation is suggested for cancerous stricture situated in the lower part of the rectum, I would suggest that proctotomy would be a better operation. According to his method, the soft parts are divided in the median line from the second sacral vertebra to the anus. The muscular attachments to the sacrum are divided as far as the edge of the opening on the left side. The coccyx is removed, the attachments of the two sacro-sciatic ligaments to the sacrum are cut, and the soft parts drawn to the left side. If still more room is necessary, it may be gained by removing a part of the lower left side of the sacrum. If the bone be divided on a line beginning on the left edge at the level of the three posterior sacral foramina, and running in a curve concave to the left, through the lower border of the three posterior sacral foramina, and through the fourth to the left lower border of the sacrum, the more important nerves are not injured, and the sacral canal is not opened. In this way the lower part of the rectum as far as the sigmoid flexure may be removed. It will be found, however, in this operation that the dissection is a very difficult one. Alexander modified this operation, the chief points being that he exsected the coccyx and all of the sacrum necessary to a certain limit. Experimenting with the two operations, I much prefer Kraske's. I have removed as much as five inches of the rectum by simply removing the coccyx, making a deep and long dorsal incision, and then practicing a thorough dissection of the gut. The one great object in both these operations is to keep the sphincter muscles and anus intact.

To those not accustomed to doing this operation, or who

perhaps have never seen it done, it would appear from the description to be one of enormous magnitude, and yet, by doing it expertly, it is surprising how small a wound is made.

Any operation looking to the removal of the rectum for cancer must be considered a very serious one, and it has met with but little favor in this country. Gerster especially, though a positive and strict antiseptic surgeon, is not pleased with the operation, and many other American surgeons look upon it with disfavor. In speaking of an operation for the removal of cancer of the rectum, I refer, of course, to the *radical* operation; for, unless this is done, it would be but temporizing, and, in lieu of any such effort, I would much prefer to divide the gut in the dorsal median line, as advised by Verneuil. I believe that in many cases of cancerous stricture it would do equally as much good as either colotomy or extirpation, having the advantage over both of these that it is much less serious in its consequences. To do the operation indiscriminately would be both unwise and hazardous. Our foreign *confrères*, who boast of such splendid results following the operation, must be credited with more enthusiasm than discretion. Nussbaum reports cutting out the rectum, a portion of the urethra, prostate gland, and the base of the bladder, and says the patient recovered all his functions and lived three years. I can not understand how, with a portion of the urethra, the prostate gland, the base of the bladder, and the rectum gone, all the "functions" of the man could be recovered. Such operations are to be deprecated. It should be a positive rule, in selecting cases of cancer of the rectum for extirpation, that if more than five inches of the gut are invaded the operation should not be done. Especially is this true if any evidence exists of constitutional infection. When the growth is beyond the reach of the finger, I never advise an operation. Dr. W. Alexander, in the Liverpool Medico-Chirurgical Journal, reports what he is pleased to call a new method for removal of cancer of the rectum. It consists mainly in the removal of the coccyx, together with a portion of the sacrum. But as this form of operation has been de-

scribed under the head of Kraske's operation, it is not necessary to give it any further mention here. Indeed, if the operation can be done without the removal of the coccyx or a portion of the sacrum, they should not be removed. Alexander says: "The piece of sacrum and coccyx removed are not missed in the least by the patient, so nothing is sacrificed." Even granting that this is true, if their removal is not an absolute necessity, it is best to do the operation without interfering with them.

If the purpose is to obtain more room in operating, it can be done by making a deep dorsal cut down to the sacrum, as suggested by Allingham. It is a common custom with operators, after the removal of the growth, to pull the gut down and stitch it to the true skin. I think it an error to make this a rule, for two reasons: 1. In many cases, if this is done, suppuration takes place, the stitches detach, and sepsis is invited. 2. If the open method is practicable, free drainage can be had, and the consequent cicatrix is a wonderful advantage in controlling the fæces. I will take occasion here to speak of a case of cancer of the rectum, lately operated on by me, which will emphasize two points. First, that cicatrization may take the place of the sphincter muscles to a wonderful degree, at least to the extent of controlling the actions. Second, that the plan of *not* pulling down the gut, or stitching it to the true skin, has advantages over the usual method.

Case.—Mr. A. was referred to me by Dr. L. Beecher Todd, of Lexington, Kentucky. The patient was a male, sixty-two years of age, six feet tall, and of slender build. Family history revealed nothing, so far as cancer was concerned. Three years ago he first noticed evidences of rectal trouble—loose bowels, severe lancinating pain, tenesmus at stool, and discharges of mucus and blood. He consulted a traveling doctor, who told him that he had piles, and was treated by the injection of carbolic acid into the part that presented. He was not benefited by this treatment. Up to this time he had lost forty pounds of flesh.

Surrounding the entire anus was a hard nodular growth, extending fully two inches into each buttock and well into the perinæum, and also up over the coccyx. A portion of this mass was ulcerated. An effort to introduce the finger showed nearly total occulsion at the anus. Some force being used, the tissues gave way and permitted the finger to enter. It was then revealed that the tumor extended about four inches up the rectum, around its entire circumference. No infiltration could be detected beyond this. Extirpation of the growth was advised and consented to. It was done the next day, after the following manner: The patient had a bath, and the parts were washed and sponged with a hot solution of bichloride of mercury; chloroform administered, the operation was begun by making an incision, starting at a point well up over the sacrum, which was carried around the left side to the perineal line. Beginning again at the sacrum, a similar incision was carried around the right side. A careful dissection was then made of the entire tumor, all bleeding vessels were secured, and tied as the operation proceeded. I ablated fully four inches of the rectum. Securing a good hold on the mass, I cut the tumor off, removing it in its entirety. In size it was about as large as a good-sized orange. Not more than two ounces of blood were lost during the operation. The wound was constantly irrigated with the hot mercuric solution. All arteries were tied, and the oozing was checked with hot water. Iodoform gauze, well dusted, was packed into the gaping wound, which would easily admit the fist, a layer of bichloride gauze was placed over the parts, a bandage applied, and the patient put to bed. It required forty minutes to complete the operation. The dressings were not removed for four days, at which time the patient had a large natural action—the first one form any months. Each day thereafter the wound was syringed by alternating the solution of the bichloride of mercury (1 to 5,000) with a solution of campho-phenique, and dressed after each irrigation as suggested. He made an uninterrupted recovery. In five weeks the large wound had closed. By this time he had gained

flesh and took a trip home, remaining there several weeks. He came back to Louisville to consult me in regard to the contraction of the anus. He informed me that he had good control of his actions. His appetite and digestion were fair, he had taken on additional flesh, and expressed himself as being very much gratified at the result. Before the operation he was unable to walk; he now walks with ease and rapidity. When asked about his ability to control his actions, he replied that he could do so perfectly, the only objection being that he felt that the contraction was too great. This was overcome by gradual dilatation.

I think this case illustrates several points of interest in the discussion of the different methods of operating for the relief of cancer of the rectum. Those who advocate colotomy in cases of this kind would have opened the colon, established an artificial anus, and left the growth in the rectum. Was it not best to extirpate the tumor? I think so, for the following reasons:

1. If colotomy had been done, leaving the tumor, the operation would not have prolonged life, except in the way of overcoming the obstruction. 2. Pain would not have been relieved so radically as by extirpation. 3. The operation, with its attending results, would have been more disgusting to the patient. 4. The extirpation relieves pain, overcomes the obstruction, and prolongs life. 5. The healing process being complete, the tumor gone, the patient's mind is relieved. With colotomy the tumor would have remained, fresh inroads have been made, and a disgusting condition presented in the side.

It will be seen that I have not taken a very favorable outlook in regard to either colotomy or extirpation as a means of treating cancer, and yet, so far as a radical operation is concerned, these are the only two that can be considered. I must confess that when a patient comes to me suffering from pronounced cancer of the rectum I am at a loss how to advise him. It is a terrible and melancholy condition, for which the surgeon can promise but little, and yet, if the pa-

tient is willing to assume the risk of an operation after it has been fully explained to him, why, of course, we have no alternative but to perform it.

Whereas the two operations named are regarded as the only two looking to the radical relief of the patient, I have in several cases adopted another plan, and in one case especially with a remarkable degree of success. I refer to *linear proctotomy and scraping away the growth.*

Case.—About ten years ago I was called to see a gentleman who resided in this city, to examine him for rectal trouble. In company with his physician, I made a careful examination, and detected, about an inch and a half above the external sphincter muscle, a hard nodular growth about the size of an English walnut, although not so oval. I reasoned by exclusion that the growth was malignant. It was located dorsally, and seemed to be closely attached to the soft structures, but not to bone. The mucous membrane was movable over it. Taking into consideration its locality, and that it was easily circumscribed, I suggested to the physician that we scrape it out. The patient was put under chloroform and the sphincter muscles divulsed, when I encircled the growth by an incision. Beginning at its base with a sharp-pointed knife, I cut away a portion of it with curved scissors. But for reasons that are apparent, I believe that the scraping process was better than to have tried to dissect it away. I therefore took a stout scoop, and, by taking time, I carefully scraped out all the diseased tissue. The cautery-iron was used to stop hæmorrhage, iodoform gauze placed in the wound, and a pad of cotton put over this. I removed this plug and dressing on the third day. I did not give a favorable prognosis, but the wound healed finely, and I had an opportunity of watching this case for five or six years, and there was no return. Of course this operation can not be done upon growths located higher up the rectum, but I am satisfied that where they are located within close reach, this is quite a good operation to do.

Palliative Treatment.—It is a very difficult thing to say just

what a surgeon means by palliative treatment for cancer of the rectum. Certainly the operation of colotomy does nothing more than palliate the disease, for the cancer is left in the rectum, no attempt having been made to remove it, and of course it goes on in its terrible ravages until the patient succumbs by death. It can only be claimed for the operation that it palliates the tenesmus, the pain, the distress, and possibly enables the patient to live a little while longer. Therefore, when we consider any operative procedure that looks to a cure of a patient who has cancer of the rectum, *extirpation* of the growth is the only one that meets, or tries to meet, such an indication ; but, as we have remarked, the mortality, in even selected cases, by excision has been very fearful, and, besides, the operation has its serious defects. Nor have we been inclined to do colotomy in these cases, for the reasons already mentioned ; therefore, what are we to do with this unfortunate class of patients ? Some relief must be afforded them. Every once in a while we hear of the discovery of some special medicine which is said to have a direct effect in curing cancer, either locally applied or taken internally. All such have proved utterly worthless in the hands of the physician. As the disease advances, the tumor enlarges, the caliber of the rectum is encroached upon, and, before we know it, a strictured condition exists. Frequently total occlusion will result from a stricture in this cancerous mass, located within reach of the finger, and oftentimes just within the verge of the anus. I have known patients suffering from this condition to endure great torture for months from the fact that the attending physician had not detected it, when a very simple examination would have revealed the condition. The surgeon, when called to such a case as this, is naturally inclined to overcome the obstruction by means of his knife, and I wish emphatically to say that when the knife is contrasted with the bougie in the treatment of such a stricture, the preference must be given to the knife. It is only with the surgeon then to determine whether he will divide the stricture by an internal incision, or whether he will do *posterior linear*

proctotomy, which includes the division of not only the stricture but of the external parts. I believe that it depends altogether upon circumstances which is the best. I have practiced both methods very often. Having but little faith in colotomy as a means of treating cancer, and regarding extirpation of the rectum as a serious operation, but the better plan of the two, I very naturally fell into ameliorating the patient's condition by watching the symptoms, and, when obstruction took place, to overcome it with the knife. And I must say that, in the division of the stricture resulting from cancer located close to the anus, I favor the *internal division* of it over *posterior linear proctotomy*. If there be a decided stricture in the mass that can be well defined and made out by the finger, I believe that its simple division on the inside of the sphincter muscle will overcome the obstruction, and will not result in any harm. I do not mean to say that the cut should be carried deep into the growth or the tissues, for I quite agree with the authors who say that if this is done it creates a receptacle for the lodgment of fæces, and would accomplish more harm than good; but time and again I have overcome obstruction of the gut in this manner, and given great ease and comfort to the patient. But if it is desirable to do a more formidable operation, and the nature of the case is entirely different, then I believe more good can be done by making a division of the external parts along with the posterior cut. I am cognizant of the fact that authors have recorded that, after even slightly nicking the stricture, abscesses have resulted. Curling reports such a case. I know, too, that it is also said that peritonitis may be excited, but I believe that either one of these conditions is the rarest of accidents, if the cancer is located in the lower part of the rectum and the stricture is within easy reach of the finger. We are often tempted to do this operation when the stricture is located higher up. One can understand very readily how peritonitis might result from the division of a stricture in such a location, and I had a death follow in my practice from doing it.

Case.—A man was brought to me from an adjoining State who was suffering with a cancer that nearly completely filled his rectum. He had glandular enlargement and constitutional infection. He was able to walk about, and appeared at my clinic at the Kentucky School of Medicine. I examined him before the class, and found a very close stricture, which almost prevented an evacuation of the bowels. I had him removed to an infirmary, and the next day did an *internal proctotomy*, washing the bowel after and during the operation with a solution of bichloride of mercury. He did well until the fourth day, when he took on an active peritonitis, and died two days later. Of course I only expected a temporary relief from this procedure, and, although I did not expect a fatal result, I did not have much to censure myself for, because the man could not have lived very long in the condition in which I found him. It might have been better to have done a colotomy, but that operation in this case could have promised but little. It is the only fatal case that I have ever had result from either the *internal* or the *external* division of a stricture.

As I have suggested, something must be done for this class of patients in the way of palliation after the disease is so advanced as to cause great pain or distress. So far as the local treatment is concerned, we can not do better than to keep these parts as clean as possible, washing out by daily injections the accumulated fæces and the discharges from the mass. It will be necessary often to throw the water *above* the stricture by using a No. 3 or 4 Wales rectal bougie, and, even if the water is passed out at once, it accomplishes some good in washing away the *débris*. As a local application, I am in the habit, after washing out the rectum as suggested, of throwing the following above the stricture, if possible, through the tube.

℞ Olive oil..... ℥j;
Iodoform..... gr. x.

This is often retained, and gives some comfort to the patient.

It is presumed that we are now dealing with a class of pa-

tients where colotomy, extirpation, and even proctotomy have been thought unwarrantable. Premising that this is true, I must differ from the authors who claim that we should be chary about the administration of opium. Cripps says: "If the nights are restless, a single dose of opium, varying from ten to twenty drops of liquor opii, is valuable, but I have the greatest dislike to the frequent administration of opium both day and night in increasing doses. The craving for the drug becomes such that the patient will magnify his sufferings to any extent in order to obtain a frequent dose. The mental depression and utter demoralization thus produced cause far more misery to the patient and distress to the friends than the physical suffering it is supposed to relieve. Employed in an indiscriminate manner, I consider opium as one of the greatest curses to which suffering humanity can be subjected."

To the latter clause of this quotation I most heartily concur, if he refers to the indiscriminate manner of prescribing opium for every-day complaints. I believe that physicians are often responsible in making opium *habitués* of their patients. Many young women, I am sure, have fallen into the habit by having had opium prescribed for them during the pain that is excited by faulty menstruation, etc. Such prescriptions should meet the condemnation of all doctors. But, instead of considering opium as a great curse, if used to subdue the pain incident to an incurable cancer, for which nothing can be done looking to its radical relief, I consider it the greatest boon ever given to the human family. Just as well say that if a man is shot in some vital spot, and must die in consequence, his agonizing pain should not be stopped by the use of opium. These people, of whom we are now speaking, have no hope for life, and there is no necessity for keeping from them that which will lull and quiet this terrible agonizing pain to which they are subject; and, after a trial with many drugs, I am satisfied that there is not a single one comparable to opium for this purpose.

What matters it if a craving be established for the drug?

I would just as soon think of keeping a dying fever patient from slaking his thirst with cold water. These patients are as surely dying from cancer; and therefore I say, even if they become *habitués* of the drug, let it be so. Surely the friends can not be distressed so much over the fact that they are using opium to quiet them as to see them suffering from the torments of pain. To such people I am in the habit of beginning with a very small dose of opium. Oftentimes the eighth of a grain of morphine will be sufficient to quiet them for hours, and may not have to be increased for some time. Then a sixth, a fourth, a third, a half-grain, and, if toward their declining days, two grains, five grains, ten grains, or let it be twenty grains, I feel that I have done them a service in relieving their body and mind of a terrible affliction.

Dr. H. O. Walker, of Detroit, has lately reported several cases of Kraske's operation and is much pleased with it. He suggests the use of a large Murphy button to attach the upper and lower edges of the severed intestine.

In answer to a paper read before the surgical section of the American Medical Association at Baltimore, the title of which was, Is Total Extirpation of the Rectum ever Justified? the following letter was received from Dr. E. H. Gregory, of St. Louis, one of the oldest and most distinguished surgeons in this country:

"ST. LOUIS, *July 23*.

"Prof. JOSEPH M. MATHEWS.

"DEAR DOCTOR: An old man's thanks for your paper, Is Total Extirpation of the Rectum ever Justifiable? The most sensible paper relating to operative surgery I have seen for several years.

"I am now in my fifty-second year's 'practice of general surgery' in a large city, and I can say, without qualification—my heart, mind, and observation concurring—'Thanks.'

"Yours truly,

"E. H. GREGORY.

"3525 LUCAS AVENUE."

CHAPTER XIX.

DISEASE IN THE SIGMOID FLEXURE.

MANY books and very many elaborate articles have been written on diseases of the rectum, but very few dissertations have appeared on diseases of the sigmoid flexure. It is true that in the works on both the practice of medicine and surgery the flexure is incidentally referred to as a seat of disease, especially that of malignant trouble, but authors are singularly silent in dealing with these diseases, both as to diagnosis and treatment. Unfortunately, if cancer be detected in the sigmoid flexure, but little if anything can be done for its relief. Such has been the edict of surgery in all time. Several reports have appeared of the removal or resection of the flexure under such circumstances—a very notable one by Dr. W. T. Bull, of New York city.

As to palliative measures, but few have been suggested except in a general way. Of the importance of this portion of the large intestine, if attacked by disease, no one will question; but the great trouble has been either to diagnosticate it when it does exist, or to treat it if detected. In my experience as a rectal surgeon, no class of patients has given me as much trouble as those suffering from vague symptoms of disease in the sigmoid flexure, and I am also convinced that they are much more common than is supposed.

From its anatomical construction and situation it is easily seen that disease here would be of a much more serious nature than if located in the rectum. Total obstruction could much more readily and surely take place, and the consequences would be more disastrous. The sigmoid flexure has a different construction from the rectum. It is generally located in

the left iliac fossa. Its fold of peritonæum is attached in the fossa, and is long enough to allow the gut to hang over the brim into the pelvic cavity. At the lower end of the flexure the fold is quite short, and holds the part up close to the sacro-iliac symphysis. It can be seen, then, that the sigmoid flexure hangs down in the pelvis like a bag when it is not distended. The rectum, at least its lower half, is fixed; the sigmoid is loose. The one is accessible, the other is supposed to be inaccessible. We have stated that the anatomical construction of the rectum evidences that it never was intended as a receptacle of fæces between the acts of defecation. In considering the physiology of this act, O'Beirne said that if the calls of Nature are not heeded, the fæcal mass is lifted back into the sigmoid flexure, and there remains until the next effort is made. During this time, of course, the watery constituent of the mass is reabsorbed, and the remainder is left in a dry, hardened condition. What could be the source of greater mechanical irritation than this? Is it any wonder, then, that a congestion, an inflammation, and, lastly, an ulceration of the gut could occur?

Although the mucous membrane of the large intestine is more like that of the stomach than like that of the small intestines, a very correct idea of the anatomical character under disease can be had by studying that of chronic enteritis—viz.: "The intestinal mucous membrane, when it has been the seat of inflammation for any prolonged time, is thickened, tough, and of a gray or almost black color from a deposition of pigment due to the chronic congestion. The epithelial cells are cloudy and ill defined, and there is an infiltration of the mucous and submucous layers with new round-celled tissue passing into the stage of connective tissue; hence the thickness and toughness. The lymphoid follicles are prominent and hard, and the intestinal glands are frequently blocked with cells and secretion and form solid, minute, though perceptible masses. The surface of the membrane will be more or less covered with a viscid, glairy mucus, containing pus and imperfectly formed epithelial cells, which may be fre-

quently voided in the form of complete casts of the tube, and this is particularly the case in the pellicular form of colitis. Sometimes the muscular coat is thickened from connective-tissue formation. As a rule, therefore, the bowel is increased in thickness. It is unusual for a chronic inflammation of the intestine to exist in adults without *coincident ulceration*" (Allingham). Cruveilheir compares the mucous membrane of the large intestine and the stomach in the following words: "When examined with the microscope, the mucous membrane of the large intestine is seen to have no villi; but we find the same appearance as in the mucous membrane of the stomach—an alveolar or honeycomb arrangement. In the stomach this character is due to the pressure of alveoli, in the bottom of which perpendicular tubuli open. In the large intestine there are no pits, but the alveolar appearance is produced by the opening of numerous tubes, analogous in form and direction to the tubuli of the stomach and the follicles of Lieberkuhn in the small intestine."

Although these statements are undoubtedly true, they have a bearing only from a physiological view, and not when we consider the changes that take place in the mucous membrane in disease; hence I have cited the well-known pathology which is induced in chronic enteritis to illustrate the condition in the sigmoid flexure when undergoing the inflammatory act.

There are two special points that I wish to call attention to in considering inflammation of the intestine: 1. "The surface of the membrane will be more or less covered with a viscid, glairy mucus, containing pus and imperfectly formed epithelial cells, which may frequently be voided in the form of complete casts of the tube, and this is particularly the case in the pellicular form of colitis." 2. "It is unusual for a chronic inflammation of the intestine to exist in adults without coincident ulceration."

In regard to the first point, it is so much like a condition that I have often seen in treating ulcerations or inflammations of the sigmoid flexure, that I will detail a few cases here.

Case I.—Mrs. B., the wife of a letter-carrier, was referred to me, suffering from what was supposed to be a chronic catarrh of the bowel. She said, in detailing her case, that she would frequently through the day feel a desire to go to stool, and would pass nothing but "matter." By this expression she meant either pus or mucus. Patients are never able to tell the difference. It was not that she had to go to stool often that worried her, but rather the amount of this "stuff" that she passed. Upon close questioning, she said that she passed as much as a pint at a time. Believing this to be an exaggeration, I asked her to save the discharge of the next day, that I might see it. This she did, and I am sure that it was as much as I could hold in my two hands. I put her on the examining table, and in a good light inspected the rectum through a long speculum. No evidence of disease could be found there. There was no special pain anywhere, and but little sensitiveness over the sigmoid flexure or descending colon; no history of former acute trouble, but for many years she had been of a decidedly constipated habit. I had her take an aperient, and the same day to wash out the bowel by enema, when I explored the sigmoid flexure with a No. 8 Wales bougie attached to a Davidson syringe. I commenced the exploration by gradually inserting the instrument and throwing a small quantity of warm water before it. It passed easily into the sigmoid, and the patient then complained of pain at that point, showing an evident sensitiveness there. I could not detect that there was any impaction of fæces, but, when I withdrew the bougie, the point for several inches was covered with a "viscid, glairy mucus" containing pus. Satisfied that I had found the seat of trouble, and that it was an ulceration, I began the treatment by washing out the flexure with a large quantity of hot water, thrown into it by means of the bougie. Each alternate day thereafter I injected the sigmoid with the following:

℞ Fluid hydrastis..... ʒj;
Aquæ dest..... ℥j. M.

This was deposited and allowed to remain. After treating

many cases of the kind, I am persuaded that the fluid hydrastis is the best agent that can be employed. It is non-irritating, does not pain in the least, can be retained without effort, and is an admirable astringent. It should be seen that the *fluid*, and not the *fluid extract*, is obtained, for the latter is very irritating on account of the alcohol it contains. This patient was treated in this manner for several months, the only difference being that the intervals for injecting were prolonged. She was entirely cured, all the discharge and pain disappearing.

Case II.—A gentleman was sent to me for treatment from Galveston, Texas, by a former patient. He was in middle life, and expressed himself as being a great sufferer from rectal disease. As he gave me a history of his case I asked a number of questions, and elicited the following: About three years back he first noticed that, whenever he had a call of Nature, he experienced severe pain in his left side before his bowels acted. Upon asking him to locate his pain by touch, he put his hand over the region of the sigmoid flexure. At that time he had no special diarrhœa, had had slight attacks of it, but regarded himself of the constipated habit. This pain increased as time went on, and he had a dysenteric discharge established. His disease had been diagnosticated as a chronic dysentery by several physicians. He had lost flesh and took very little interest in his business; was of a bad color, and melancholy. His rectum was submitted to a rigid examination, but I was unable to detect any special trouble there. True, the upper part appeared slightly congested, but I may have been mistaken even in this. A No. 8 Wales rectal bougie was passed into the flexure without difficulty, although he complained of pain in the "left side" when the instrument entered the sigmoid. Upon the point of the bougie, when withdrawn, was a glairy mucus. His habit was to go to stool eight or ten times in twenty-four hours. I could not make out any tumor by palpation. An examination of his discharges revealed a coffee-ground appearance of fæces, a few clots of blood, and much mucus. I thought that I de-

tected the "peculiar odor" of cancer. Anyway, I wrote to his friends that I suspected malignant trouble in this case, and believed it located in the sigmoid flexure. One point I wish to speak of here is, that it will be noticed that I say a No. 8 rectal bougie passed into the flexure without difficulty. Stricture is sometimes found at the entrance of the flexure; cancer is located above it; but in many cases I have known the growth to be in the upper part of the flexure, and if contraction existed, it was higher up the colon. A second point: I have never been a believer in spasmodic strictures of the gut. There could be no better place to find one than at the entrance of the sigmoid, where there is a certain aggregation of muscular fibers. Third: If, as has been imagined by some, a third sphincter muscle exists at this part of the rectum, this would have been a most excellent time for it to have shown itself.

This patient remained with me for two weeks, and I injected the sigmoid daily with the fluid extract of *Pinus canadensis*, alternating with the following mixture:

℞ Sweet-almond oil..... Oj;
Subnit. bismuth..... ℥ij;
Iodoform..... ʒj.

M. Sig.: Shake well each time before using, and inject one ounce at bed-time, through a Wales bougie.

The *Pinus canadensis* is diluted with four to six parts of water. It requires some expertness in injecting the oil. My method is to introduce first the bougie into the rectum for four inches, then, pushing the small point of a Davidson syringe into it, into which the hot water is already drawn, I throw one bulbful through the instrument, and by the aid of the water the bougie will pass easily into the sigmoid. Then drop the suction end of the syringe into a cup containing the oil preparation, draw into the bulb the amount that you wish to inject—generally one ounce—and, having injected it, drop the end of the syringe back into the pan of hot water and throw one additional syringeful behind the oil, which forces it well into the sigmoid. By this procedure we throw two bulbfuls of water and one of the preparation into the

part intended. It will be retained sometimes for one hour, sometimes indefinitely. At the end of two weeks the number of evacuations had been reduced in this man from eight or ten to two or three per day. He left for home after I had given full instructions how to use the bougie, and had seen that he could do it without harm. I received several letters from him, but after a while they ceased, and I supposed he was dead, or nearly so. I afterward learned that he had entirely recovered. My diagnosis was incorrect, but I had the pleasure of knowing that my treatment was good.

Case III.—Miss B. L., aged twenty-one years, had been in most excellent health all her life until about one year past, when a painful dysenteric (?) discharge began. She would go often to stool and pass a muco-purulent or muco-bloody action, sometimes only clots of blood. She had lost much flesh when I saw her, and was not able to walk alone. She would recline often on a couch, and then be assisted to bed. She complained of intense pain in the back and often in the abdomen. Several times a large quantity of mucus passed in the bed, she being unable to control it. Although I passed several long tubular speculums into the rectum, the examination did not reveal enough trouble to account for her symptoms. No tumor could be defined anywhere. To help me in my diagnosis, I had specimens submitted to a microscopist, and he pronounced the discharge *malignant*. I began the injection of the sigmoid flexure with fluid hydrastis, half an ounce to four ounces of water, through a Wales bougie, depositing it in the flexure. I would alternate it weekly with the use of the oil, bismuth, and iodoform. The symptoms began gradually to disappear, and after two months had all subsided. She is now entirely well.

Case IV.—Dr. R., an eminent physician and surgeon, of New Orleans, consulted me a short time ago in reference to himself. He had lost some flesh and was of a bad color; complained of pain in the left inguinal region, for which he was in the habit of taking an opiate. He suffered from a

decided obstipation of the bowels—so much so that he had to resort to frequent injections of hot water to coax the fæcal mass down from the sigmoid flexure ; and then, after it had fallen into the rectum, he experienced great difficulty in getting it to evacuate. The action was usually hard bits of fæces, and caused a straining effort at stool. I examined the rectum carefully, and outside of a large, capacious pouch, it was normal. Introducing a Wales bougie, by the aid of hot water injected before it, no difficulty or obstruction was detected until the entrance of the sigmoid flexure was reached, when it refused to go any farther. Although I tried diligently, it could not be passed into the flexure. I believed, and so expressed to him, that a stricture existed at that point. He being a surgeon of rare ability, I advised him to get a smaller bougie, take it home with him, and by perseverance I thought that he would eventually succeed in getting it into the flexure. When this had been accomplished, I prescribed the use of the almond oil, subnitrate of bismuth, and iodoform mixture, and occasionally to inject with the diluted hydrastis. He wrote me several weeks after his return home that he had succeeded in introducing the bougie into the flexure, and that he felt improved from the treatment. I am unable to decide definitely in my mind what the character of growth was that was producing this obstruction at the entrance of the flexure, but I am suspicious of its nature. The case bears out, however, what I have said—viz. : that it is a most difficult matter to define a growth in this part of the colon, and a more difficult one to tell the nature of it.

Another case which beautifully illustrates the good results that can be obtained from medicating the sigmoid flexure is the following :

Case V.—General M. was brought to me for treatment by his family physician. Although a man of corpulent form, he had lost much flesh. His color remained good. He had complained for months of pain in the left inguinal region, accompanied with frequent attacks of "hæmorrhage." The

idea conveyed was that for an interim blood would not pass from the rectum, but suddenly upon going to stool, a large quantity would pass, and as many as from seven to ten actions would take place in twenty-four hours. Malignant disease had been suspected by his attending physician. Upon examination, no tumor could be detected over the sigmoid, and no disease in the rectum. Believing the trouble to be in the sigmoid flexure, I asked him to remain at the infirmary, where he could be properly treated, to which he consented, when the injection of the oil preparation named was begun. He was kept most of the time in the recumbent position, and the medicine was deposited in the colon once a day. I should remark that upon the day of his arrival he had seven large hæmorrhages from the bowels; a few were pure blood, the others were mixed with mucus. After the first injection the amount of blood and mucus began to diminish, and in a week's time they had disappeared. He expressed himself as feeling much relieved, and was allowed to sit up as much as one half the day. During the time of treatment I did not restrict his diet. In the majority of cases I do so, however. After two weeks' stay at the infirmary he left for home, where his physician kept up the treatment, substituting the fluid hydrastis, after two weeks, for the oil preparation. At the end of a month I received a note from the doctor, which said: "The treatment with hydrastis was kept up twice a day for a week. There is no mucus in the discharges, and no blood. His bowels move but once in twenty-four hours; he is coming to town every morning to his office, and is now attending his court. He is much better, and is feeling and looking splendidly."

Case VI.—In May, 1890, I received a dispatch from a physician to come to Shelbyville, Ind., to see a patient suffering from some form of rectal obstruction. I went over in the afternoon, and was met at the station by the patient, who was driving his carriage. He was a man about fifty years of age, and to all appearances was the perfect picture of health. He was a short, well-built man, of ruddy complexion, and in

good flesh. After reaching the house he told me the following: "Several years ago I began to suffer with attacks of pain in my left side. At first they were not severe, but as time went on they increased in severity, until now they are past endurance. I am thoroughly constipated, and can not have an action without the greatest difficulty; and then it is not satisfactory, because only small bits pass—never a free, well-molded action. I often go to stool, and pass only mucus, or mucus and blood."

His appetite was fairly good, and, as I have said, he looked like a healthy man. I stripped him and had him lie down on a hard table. Over the region of the sigmoid flexure I detected a well-formed tumor, which I at first thought was just under the skin, but by manipulation I could feel that it had a deeper base. I was then told that this tumor was congenital and had never given him any trouble. I then searched the rectum with the fingers and with the speculum, but could detect no trouble there. I gave it as my opinion that a tumor of some kind was embracing the sigmoid flexure, and was causing an obstruction, and, although an operation was not justifiable at that time, the time would come when it would be the best to do a colotomy, and in that event they could telegraph me. I did not think at this visit that the offending tumor was cancer, especially because the man's looks did not indicate it. He was in good flesh and had a fine color. I was informed, after my examination of him that Dr. Cook had seen him a short time before and gave very much the same opinion as myself, except that he believed that the tumor was a malignant one, and had no connection with the congenital one. Some time after I saw him he was taken to see a distinguished surgeon in Chicago, who, so I am informed, gave it as his opinion, after a rigid and painful examination, that there was really nothing of any concern the matter with the patient. He was advised to go home, attend to his daily business, and "forget himself." This encouraged his friends, but the man gradually went from bad to worse, until he died a few months afterward.

An autopsy revealed a large *malignant* tumor, which had blocked the sigmoid and constricted its entrance, and death resulted from perforation.

Case VII.—This case will show how a certain article of diet can cause an unsuspected impaction of the sigmoid flexure. Dr. W., over seventy years of age, had been constipated for some time, and conceived the idea that a diet of oatmeal exclusively would overcome it. Consequently he adopted the plan, and lived only on this article for three weeks. About that time he became aware that his bowels were not moving at all. He tried purgatives, but without effect. His condition became alarming, and he called his physician. Numerous plans were tried to produce an evacuation, but all failed. Several physicians were called, and each recognized that there was an obstruction somewhere in the bowel. At last peritonitis began to develop. His physicians had tried to introduce a rubber tube, a stomach tube, a Wales bougie, etc., into the sigmoid flexure, but it could not be accomplished. About this time I was called in consultation. The case was described to me by his physician, and I was asked to go to him and try to introduce the bougie and to report my diagnosis. Accompanied by one of the attending surgeons, I went to his room and carefully examined him. His temperature was high and pulse rapid. He was, however, able to give me a lucid description of his case. I then anointed a Wales bougie, which was attached to a Davidson syringe, and, gently inserting it into the rectum, I firmly pressed it up until I was satisfied that it had reached the entrance of the sigmoid. Water was then forced through the tube, and after a little while the instrument passed fully one inch farther, but seemed to be engaged at this point, and would go no farther. Withdrawing it, we found the end of it loaded with fæcal matter which looked like soft white or yellow clay—evidently fæces made by the oatmeal diet. Upon my return to the physicians, I gave it as my opinion that it was a case of impaction of the sigmoid flexure, caused in the manner just indicated. We all agreed that the sigmoid was the seat of trouble, and attempts were made

daily to wash it away, but without success, the man dying shortly after.

I have recited a sufficient number of cases to show that the sigmoid is a common seat of disease, and to emphasize one point especially—that it is a difficult thing to make out a tumor at this locality, be it malignant, non-malignant, or an impaction.

The flexure may be affected with the following pathological conditions: 1. Congestion. 2. Inflammation. 3. Simple ulceration. 4. Specific ulceration (syphilis). 5. Malignant ulceration or growths. 6. Stricture (either malignant or non-malignant). 7. The receptacle of foreign bodies causing disease. 8. Tuberculous ulceration.

1. *Congestion.*—I make a distinction here between a congestion and an inflammation, from a pathological standpoint, because I believe if the congested condition is recognized, it can be cured before any changes constituting the phenomena of inflammation take place. I am satisfied that many of the so-called catarrhal conditions of the bowels are simply cases of a local congestion in the sigmoid, having their discharge of mucus—not pus—and evidencing such symptoms as pain in the abdomen and some reflected symptoms. A number of such have been cleared up in my practice by washing out the alimentary canal by aperients, and by a local washing of the sigmoid flexure with large quantities of hot water alone; or, if any medicament was used, the fluid hydrastis in full dilution is found of great service. I have seen patients discharge as much as six ounces of mucus a day from causes like this. But when it is remembered that the slightest irritation of the mucous membrane will cause its rapid secretion, it is no wonder. It is wonderful how quickly these cases clear up with the proper treatment.

2. *Inflammation.*—After the inflammatory changes have taken place in the gut, it is a difficult thing to effect a cure. The symptoms are aggravated, and some of these cases are very obstinate and resist treatment for a long time. The same plan is to be pursued, with the addition, however, of a re-

stricted diet. Whenever simple inflammation attacks the sigmoid flexure, it is accompanied with many reflex symptoms, such as pain in the back, colicky pains in the stomach and bowels, often a localized pain over the left inguinal region, a great amount of flatus, diarrhœa, sometimes constipation, straining at stool, although the most pain is before going to stool, caused by the fæces passing through the sigmoid flexure. The discharges sometimes assume a dysenteric character, though they are not so apt to as when the flexure is the seat of *ulceration*. These patients often count themselves invalids without knowing their real trouble, and with all deference I would say that they are often mistaken for other troubles by the physician, and the disease treated by medicines in a general way, when local treatment is indicated. I am firmly convinced that constipation is the most frequent cause of inflammation in the flexure. This is a natural conclusion, when we take into consideration the physiology of the act of defecation. The fæcal mass being lifted back from the rectum to the sigmoid flexure, deprived of its water, lies there in a dried condition, acting as an irritant and causing at first a congestion of the blood-vessels, which goes on to inflammation, and ends in an ulceration of the mucous membrane. Constipation being first the cause, the order of things is now reversed, and the condition causes constipation. In such condition, then, many patients are given a purgative course of treatment, which is adding fuel to the flame. Under these circumstances a local application to the flexure of the *almond oil, bismuth, and iodoform* is most grateful. But these patients should be kept under a strict surveillance and guarded in diet, exercise, habits, etc. It would be much better, if we looked to a speedy recovery, if they were confined to the bed or their room during the treatment.

3. *Simple Ulceration.*—This is a much more serious condition than either of the other two, although it may be regarded as a third stage of the same disease. Just as sure as congestion will end in inflammation if stasis occurs in the blood-vessels, just so sure will inflammation end in ulceration

of the gut if the inflammatory deposit remains, and if the gut is subjected to friction by the passage of the fæcal mass or irritation by pressure. In the ratio of its being the third stage in the inflammatory disease, it is three times more serious in its nature than the first step—congestion. Although in the beginning the reflexes were mild, they are now determined; the pain was slight, it is now severe; the discharge was mucous, it is now muco-purulent and bloody; the actions, then infrequent, are now frequent. Even in the second stage the patient was able to go around and suffered an immunity from any exhausting symptoms; with ulceration, every action reduces the patient nearly to utter exhaustion. There is great straining at stool and the bowel never feels emptied; an uneasiness is felt always in the abdomen; the reflexes extend to the womb, ovaries, tubes, etc., in the female, and to the bladder, urethra, and prostate in the male. The patient suspects and the doctor often believes that malignant disease exists somewhere, and the treatment given is usually of a palliative character, not curative. He drifts from bad to worse, and after a while is a confirmed invalid. May it not be for want of proper treatment? Many cases of diarrhœa or dysentery (?) I am certain would find an explanation if the sigmoid flexure was searched. Indeed, I have treated many cases and carried them to a full convalescence that had "gone the rounds" for chronic diarrhœa or dysentery. In all such cases I would suggest that the flexure be explored and treated, and many will clear up. The manner of treatment is the same, in a general way, as that of simple inflammation of the gut, with the addition of a stimulating injection first. One of the best is a weak solution of nitrate of silver, say five grains to an ounce of water, deposited in the flexure, and afterward followed with injections of fluid hydrastis or *Pinus canadensis*, diluted four parts with water, and then the use of the oil preparation as already prescribed.

Specific Ulceration.—What I have said, so far as symptoms, etc., are concerned, in simple ulceration of the flexure,

obtains in cases of specific ulceration or ulceration the result of syphilis. That the sigmoid is often the seat of such ulceration I am convinced; and that it is equally overlooked I am satisfied. In a local way it would present very much the same line of symptoms as *simple ulceration*, but, in addition, we would either have a history, or likely find evidence, of secondary syphilis. I say *likely*, for the reason that I mean to imply a doubt, for I have seen cases of undoubted syphilitic ulceration of the rectum and sigmoid flexure where no other evidences of constitutional affection existed. In addition, therefore, to a local treatment in cases where we have cause to suspect syphilis, we are to employ a constitutional as well as a local treatment.

We have quoted Cruveilhier as saying that the mucous membrane of the large intestine and the stomach are very much alike in an anatomical way, and have already given his comparison. Every physician is aware of the fact that a gastric ulcer has a decided tendency to extend in depth, and ultimately it may perforate the wall of the stomach. Leube, in referring to this fact, says, in his admirable article in Ziemssen's Cyclopædia: "When perforation does take place, it would almost always be followed by a general fatal peritonitis, were it not that, fortunately, in about forty per cent of the cases, this result is obviated or at least delayed by adhesions between the stomach and the neighboring parts. In this way the stomach at the point of ulceration becomes glued to the pancreas, spleen, liver, etc."

Now, in contrast to this, we have demonstrated that the sigmoid flexure hangs down in the pelvis like a bag, and has no fixed position at all, and yet it is subject to ulceration just as often, and perhaps oftener, than the stomach, and the ulceration evidently has also a tendency to extend in depth; consequently perforation of the wall of the colon is likely to occur, and, if such result takes place, a fatal peritonitis would occur, because there are no fixed adhesions usually in this condition of affairs of the sigmoid flexure. I have cited two cases in former chapters in this book where I am sure

that death was the result from perforation because of this ulcerated condition in the sigmoid.

Of course, in dealing with disease in the sigmoid flexure, we must of necessity include the remainder of the descending colon at least, and, in order to emphasize my conclusions, I desire for a time to speak more especially of the large intestines. The long axis of the large intestine intersects that of the small intestine at almost a right angle. I have already indicated that the three points of accumulation of fæces, and consequently of disease, are the cæcum, sigmoid flexure, and rectum. The cæcum is inclosed by a serous layer, and below it we find the appendix vermiformis. How often this is the seat of disease requiring medical or surgical treatment every physician is aware, and it is not my province to deal with it here. The colon has a horseshoe shape, and hence has been divided into three parts. Because of this peculiar bend, we have both to the right and to the left a distinct flexure. At the flexures, it is well known that the passage of ingesta meets with delay. It is said that this explains the fact that in inflammatory processes, particularly dysentery, the chief foci of disease are found at the flexures, and also shows the advisability of giving special attention to these places by percussion and palpation in cases of constipation. Now, if this is true—and of its truth no one can doubt—the reasons for detecting accumulations in the sigmoid flexure are especially apparent. We have tried to demonstrate that this is the seat for impaction of fæces, and not the rectum, as is generally supposed. And yet I have asserted that it is often impossible to detect this accumulation in the sigmoid by palpation, and I also differ from those who say that it can be detected by percussion. "The dull note to the left of the spine just above the crest of the ilium" is not often present. It is very well, under this head, to deal with the anatomy of the part a little more minutely, that we may understand its pathology. Not only is the mucous membrane of the large intestine very much like that of the stomach, but the minute distribution of the blood-vessels in the large intes-

tine is also similar to that which is found in the gastric mucous membrane. The arterial supply of the large intestine is derived from the superior and inferior mesenteric arteries, the latter of which gives off the superior hæmorrhoidal to the sigmoid flexure and the posterior wall of the rectum. The superior hæmorrhoidal communicates with the middle hæmorrhoidal derived from the hypogastric, and with the inferior hæmorrhoidals from the common pudendal. The veins correspond, in course and name, to the arteries mentioned; thus the veins of the colon empty into the superior and inferior mesenteric. It is not necessary to speak just here of the blood-supply of the rectum, for its anatomy has been considered in another chapter. The nerve supply of the colon has already been referred to.

We have spoken of the power that the colon has of absorbing water, and have referred to the fact that as much as a gallon can be thrown into it and retained, going rapidly into the circulation and being eventually thrown off by the kidneys, etc. The probability that the large intestine plays a more important part in the absorbent process than is commonly supposed, is supported also by the fact that in dogs with a fistula of the colon, the food escapes through the opening as early as an hour and a half after food is taken, while, as is well known, the food usually tarries in the large intestine for at least twenty times this period. So we see that the colon is made to do not only its own function, but is also called upon to perform the functions of the stomach; therefore we have a double reason for supposing that it is frequently the seat of trouble, such as congestion, inflammation, ulceration, etc. I have spoken in this article of medicating the sigmoid with an oil. Now, it has been demonstrated that the large intestine under certain circumstances is able to absorb fat. The oil preparation to which I have referred as being a favorite of mine for such treatment is generally retained, and consequently absorbed. A very nice point here is the application of these results to the practice of feeding per rectum, or per colon, by enemata. It is also well

known that the peristalsis in the small intestine is very active and rapid, and propels its contents quickly into the large intestine. In the colon the opposite of this is true, the peristalsis taking place very slowly. Hence the very long delay of the fæces in the colon, more especially in the sigmoid flexure. We have had frequent occasion to speak of the so-called catarrh of the intestines. Now, in many cases where this condition was referred to the small intestine, I satisfied myself that the condition existed only in the colon, and have evidenced that fact in the citation of cases in this chapter.

This condition I shall only speak of as being a chronic one or brought about by long-continued causes. Therefore, where the intestinal mucous membrane in acute catarrh is characterized by a vivid scarlet complexion, in a chronic congestion of the mucous membrane of the sigmoid flexure we would have a bluish or dark complexion. Sometimes there would be extravasation of blood, sometimes not; but that the inflammatory exudation is very decided there is no doubt, and this accounts for the great amount of mucus which is sometimes poured out; and when the ulcerative process has taken place, we have the purulent exudation together with the swelling of the mucous membrane. Now, it is a noticeable fact that in the large intestine, especially during a chronic intestinal catarrh, its mucous membrane proliferates in various places in the form of capillary tumors; therefore it can be easily seen that the pathological condition here in the large intestine—say, of the sigmoid flexure—is very decided both in the mucous membrane and in the submucosa. No wonder, then, that the morbid process rapidly advances, and the degeneration of coats takes place. I do not think it can be doubted that the colon is the most frequent seat of catarrh, or, more properly speaking, of that condition which excites to catarrh. There is but one reason for this, and that is that the walls of the colon are exposed to the friction of the passing or retained fæcal mass. Physiology teaches us that the fæces begin putrefaction while in the colon, and also that septic organisms cling readily to an inflamed mucous mem-

brane. I think the dark color, emaciation, sweats, etc., that are frequently observed in persons suffering from the constipated habit are all due to a species of sepsis, or so-called blood-poison; at least it is a fact that, while the fæces are held in the sigmoid flexure, the water constituent has been absorbed and passed into the circulation. Now, when we consider that the putrefactive changes were going on, or had taken place in this mass, we can very well understand how it is that the septic organisms can be passed through the blood. I hold that the sigmoid flexure is more responsible for the confirmed habit of constipation, with all of its incident troubles, than any other portion of the alimentary canal, and I imagine that if the æsthetic young lady could come to realize the fact that she is daily absorbing into her system the putrefied fæcal mass, she would pay more attention to the physiology of defecation than she does, and yet, if she consults her physician, she is often pacified by the statement that her trouble amounts to nothing, and her only need is in an active purgative pill. This was among the first things that actuated me to investigate the sigmoid in disease.

If inflammation attacks the cæcum, the common term to indicate the condition is typhlitis, and I will not moot the question with those gentlemen who so strongly maintain that the appendix vermiformis is the seat of trouble in such cases; but I simply mention the fact that typhlitis is undoubtedly sometimes produced by fæcal impaction. We know that if the fæces are retained in the cæcum and are not removed, inflammation will take place, which results in an ulceration, and this will lead to perforation, which ordinarily means death. I will incidentally remark that I am a believer in the doctrine that the appendix vermiformis is perhaps more commonly the seat of inflammation than the cæcum, and that whenever it is the case has passed out of the hands of the physician and should belong to the surgeon. When inflammation attacks the colon or rectum, it is called, respectively, colitis or proctitis. I have already considered the changes that take place in the colon from inflammation,

and proctitis will be considered under the head of inflammation of the rectum. I do not wish to enter into any discussion as to what causes inflammation of the mucous membrane of the intestinal tract, save of that part of it which is included in the sigmoid flexure and descending colon. It is an admitted fact, however, by all those that have studied the ætiology, that the intestinal mucous membrane is particularly liable to inflammation, and, as Leube says, even slight irritation may suffice to incite the inflammatory act. Therefore, to pass by the causes which excite to enteritis, I wish particularly to reaffim that any long-continued irritation of the mucous membrane of the intestines will surely excite to a consequent congestion, inflammation, and ulceration, and, if other portions of the intestine are liable to the inflammatory changes, the sigmoid flexure is more especially disposed to this condition. In the small intestine, undigested food, etc., may excite to the condition ; in the larger intestine it is more mechanical, and arises from direct irritation caused by foreign bodies, hardened fæces, etc. Now, outside of this mechanical irritation, it is conceded by physiologists that there is a chemical action inducing to disease, brought about by the putrefactive changes in the fæcal mass which is not allowed to pass.

I have stated in my recital of cases that in inflammation of the sigmoid flexure diarrhœa was frequently a prominent symptom, and yet, literally speaking, this was not a diarrhœa. The peristalsis was excited by the mechanical irritation of the mass, and frequently when the patient yielded to this solicitation to go to stool only mucus, perhaps some blood, would be passed. What an error would be committed to treat this diarrhœa (?) by the astringent plan or by opium ! And yet I imagine it is sometimes done. True, the physician may order the usual aperient, but he also usually orders the opium afterward. How necessary it is to watch the subsequent symptoms and treatment of such a course can be easily seen. When we are dealing with catarrh of the rectum it will be observed that the evacuations are very seldom liquid,

but often consistent, which condition frequently throws us off our guard. No one would deny that the accumulation of hardened fæces in the rectum would produce proctitis, and yet many seem to forget that the same thing would cause an inflammation in the sigmoid flexure. Therefore, although diarrhœa, so called, is a symptom of disease in the sigmoid, it is not a necessary symptom, and, even when it does exist, the discharges should be examined and the character of them seen and not described by the patient. Whenever there is a chronic condition, exciting to a discharge of blood, of mucus, and of pus, some grave trouble must be looked for, and the seat of this trouble will be found either in the rectum or in the sigmoid flexure. In one of the cases that I reported I mentioned the fact that a lady patient passed as much as half a pint of mucus at an evacuation, and she would frequently have these evacuations. It is too often the case that if a large amount of mucus is passed, the physician refers it to the rectum. My experience has been that the location is most frequently in the colon. When the fæces are discharged in a hardened condition, enveloped in mucus, I generally refer the trouble to either the sigmoid flexure or the rectum. De Costa says: "In rare cases, particularly in hysterical women, coherent cylinders of mucus are discharged, in the form of membranous casts of the intestine, from an inch to a foot in length. Their discharge is accompanied by attacks of colicky pains (often above the umbilicus), distention of the abdomen, and an aggravation of the previously existing obstinate dyspepsia."

From the phraseology employed here, it is to be inferred that this condition of affairs occurs more especially in the hysterical woman; ergo, the hysteria is partly if not wholly responsible for this condition. I certainly can not accept this proposition. Whenever I see "cylinders of mucus, from an inch to a foot in length," attended by "attacks of colicky pain, distention of the abdomen," etc., I am sure that I am dealing with a pathological change in the bowel with which hysteria has nothing to do. When inflammation ex-

ists in the sigmoid flexure, the local pain elicited at that one point is not very definite, but the radiating pains by reflex to the abdomen, back, thighs, bladder, etc., are very pronounced, and it is the aggregation of these symptoms, if I can so speak, that gives us an indication of the nature of the trouble; and yet, where ulceration exists in the sigmoid, deep pressure over its site will elicit a response.

Leube says: "Chronic catarrh of the rectum is characterized by an abundant discharge of pus, which sometimes oozes constantly from the anus, so that a simple inspection reveals the nature of the case." Now, whenever I see pus escaping from the rectum, I am satisfied that the disease has progressed further than the inflammatory state. As long as the mucous membrane is intact, I care not how much inflamed it may be, there is not going to be abundant discharge of pus oozing constantly from the anus; but it will be observed, upon a local inspection of the part, that a deep-seated ulceration exists. Therefore I think the term catarrh should be restricted to an inflammation of the mucous membrane of the intestine, where the discharge from such a condition is mucus, perhaps abundant, but not pus. When the colon is inflamed, the proper term is colitis; but there should be a distinction drawn between inflammation *per se* and the ulcerative process, and no one symptom can so point out to us that distinction as the discharge. If it be mucus, it is catarrhal or inflammatory. If it be pus, it is from an ulcerated surface. If it is muco-purulent, then there is a coincident inflammation and ulceration. I am very well aware of the fact that ulceration is set down as one of the results of the inflammatory act, but yet I say that, so far as the treatment is concerned, it is absolutely necessary to recognize the difference. We must consider the fact that if a chronic inflammation exists in the intestinal tract at any site, the danger is that a stricture will take place at that particular locality, and if a stricture results and the natural evacuation of the bowel is prevented, we are to apprehend serious trouble. Several years ago I reported a case of a stricture

at the lower border of the sigmoid flexure caused by chronic inflammatory trouble (specific), and we all know how serious is this pathology of the gut. We have shown to what dangers the cæcum is subjected by inflammation, and we may add the same condition in the appendix vermiformis—all caused by the inflammatory changes; so we can argue that the sigmoid flexure, though of larger caliber, performs a different function and is just as liable to disease, and that the consequent changes brought about by inflammation may, in the long run, prove just as serious.

Treatment.—I have already indicated the line of treatment to be pursued in inflammation of the sigmoid flexure. Mr. Hilton, in his most excellent book on Rest and Pain, has given us a great point in the treatment of disease. I do not know any class of troubles that calls so absolutely for rest as does that of inflammation; therefore, when the colon or sigmoid flexure is inflamed, it should be rested. As a preparatory treatment, I have advised that the patient should be freely purged by the aperient plan. In conjunction with this, the sigmoid flexure should be washed out with large quantities of hot water. It must be remembered that this can not be accomplished through the ordinary enema tube, but the very best instrument for the purpose is a Wales bougie of suitable size. Having cleared the alimentary tract, we are now to turn our attention to the diet of the patient, because this is one method of giving the colon rest. Any article of food which is difficult of digestion, or would cause a mechanical irritation in the bowel, must be prohibited. We do not desire much solidity given to the fæcal mass, consequently we must avoid the use of bread and meat, and substitute as far as possible a liquid diet. Undoubtedly, milk is the best of all liquids to answer this purpose, but a milk diet alone is objectionable; not enough consistence is given to the fæces, and chalky concretions are sometimes formed by its use and a constipated habit induced; therefore, along with milk I advise the eating of very soft boiled eggs and the taking of some one of the prepared foods. Among the very best of this

latter class will be found the one manufactured by Reed & Carnrick, of New York. The preparation known as Bovinine answers the purpose admirably, in that it is very nutritious, and can be taken in either water, milk, or wine. I have found that these patients need a little stimulation, and, although whisky is usually contra-indicated in inflammatory troubles, I allow them to have a milk-punch occasionally. These patients should be confined to their bed in the recumbent position. It must be admitted that it is practically impossible to render the organism aseptic by means of internal antiseptics, or to make it in this way an unsuitable field for the growth of micro-organisms. Yet I am persuaded that the intestinal tract can be brought more or less under the influence of this class of remedies. Therefore, in affections of the colon, I am in the habit of using such drugs as salol, bismuth, listerine, etc. The local form of treatment has already been indicated, and is as follows: The surgeon should be provided with a Wales rectal bougie, No. 5, and a good Davidson's syringe. After the sigmoid has been sufficiently washed out, the following mixture should be ordered:

℞ Sweet-almond oil..... O j;
Subnitrate of bismuth..... ʒ ij;
Iodoform..... ʒ i.

M. Sig.: Shake well each time before using.

The point of the syringe should be tightly fixed into the larger end of the bougie; the bougie, well anointed with vaseline, should be pushed into the rectum about three or four inches, and then one syringeful of hot water thrown in front of it. It can then be passed into the sigmoid flexure. One bulbful of the oil preparation should now be drawn into the syringe and injected. An additional bulbful of hot water should now be drawn into the syringe and thrown behind the oil, thus pushing it all into the sigmoid flexure. The instrument is then to be withdrawn and the patient told to rest on the left side, the buttocks elevated. I have also advised that in cases of ulceration of the sigmoid this preparation should be alternated with fluid hydrastis, from two drachms to half

an ounce, diluted in half a cupful of hot water, and thrown into the sigmoid flexure by means of the bougie. If the ulceration be due to syphilis, of course the patient should be put under antisyphilitic medication.

Cancer.—That the sigmoid flexure is frequently the seat of cancer there can be no doubt, and being inclined to the view that cancer begins as a local disease, we can with much force argue that traumatism is easily set up in the flexure; but I know no portion of the body wherein it is as difficult to detect a morbid growth as in this one locality. I have already said that I do not believe that cancer of the sigmoid flexure can be detected by palpation. This rule will certainly hold good where we have a large abdomen to deal with. Possibly, where the subject is thin and emaciated, some obstruction may be evidenced at this point through the walls of the abdomen; but it would be a very difficult thing for a surgeon to say, outside of a clinical history of a case, what that character of obstruction was; and, indeed, even in these cases where the abdominal walls are thin and flaccid, it would be the rarest case where the tumor could be defined.

Symptoms.—The symptoms that attend incipient cancer in the sigmoid flexure are very much like those of a simple inflammation, or perhaps an ulceration. So perfectly *nil* are the symptoms of a cancer in the colon that, in a number of cases that I have met, the patient has been suddenly attacked by what was supposed to be an acute obstruction of the bowel. In one of the cases already reported in a former chapter, I related the fact that a man had a complete obstruction somewhere in the intestinal tract, which was difficult to locate, and when I introduced my hand into the rectum and pushed my fingers up to the sigmoid flexure, I found that it was one cancerous mass, producing a total obstruction of the bowel. And yet this man had not emaciated in the least, weighing at that time over two hundred pounds, which was his usual weight. It is a common rule that we never see these patients until a grave pathological condition exists, and even then they are simply complaining of reflex symptoms,

and generally of constipation. In questioning these patients, it will be found that they have sometimes suffered with diarrhœa, alternating with constipation. They themselves may be deceived as to the state of the bowels in regard to evacuation, for patients are very apt to think that if they go to stool and have a passage, it matters not how small or of what consistence, the bowel has been emptied; therefore, unless you are very careful to trace the condition by more pertinent questions, you will fail to elicit the true state of the case. I have already referred to the fact that pain in these cases is not a correct guide in forming an estimate of the gravity of the trouble. It is the common opinion among the masses that all cancers are extremely painful, and many of the profession drop into this way of thinking, and yet, on questioning these patients, oftentimes they will give you no history of any definite pain. By practicing percussion over the sigmoid, it will sometimes be evidenced by tenderness that some trouble exists there. I am in the habit, in making out a diagnosis in these cases, to have the patient suddenly flex his left thigh upon his abdomen. This generally causes him to speak of pain in the sigmoid. But a symptom of more regularity than this is the irregular action of the bowel, and this point should be definitely settled by the physician. He should also examine the character of the stool in reference to three points: First, whether there is blood, mucus, or pus; second, whether there is any consistence; third, whether there is any molded condition. It will be found upon inquiry that there is an accumulation of gas in the abdomen, evidenced by tympanic condition, and sometimes this accumulation of gas causes a colicky pain. I have also said in a preceding chapter that I do not put much stress upon the *cachexia* incident to cancer. If a patient is observed who has suffered a great hæmorrhage, or who suffers from a small hæmorrhage occurring often, it will be seen that this same peculiar color exists; or, if a patient has a cirrhosed liver, he will take on this peculiar color. It is well known that organic kidney disease will produce this muddy complexion;

therefore it can not be said that it is pathognomonic. There are many other conditions which will induce it. As intestinal stenosis takes place, we are apt to have more pronounced symptoms, such as distention of the abdomen, vomiting, etc. The peristaltic motion of the bowel is excited by the accumulation of the mass of fæces above the point of constriction. It also excites to an antiperistaltic movement, and cancer located in the colon, especially in the cæcum, excites to stercoraceous vomiting. A point of considerable importance is the distention of the pouch of the rectum in the cases where the obstruction exists in the sigmoid flexure. By inserting the finger it will be noticed that it can be swept around in a great space. It is possible that a small portion of the mass may be passed with the stool, and if saved by the patient the physician is enabled to form a more correct opinion. Wunderlich reports a case where one of his patients passed a cancerous mass as large as a walnut. Should this take place, it is very apt to be accompanied by an excessive hæmorrhage. A diagnosis can be made between cancer located in the sigmoid flexure and cancer of the rectum by simply introducing the finger into the rectum and detecting the growth, and the train of symptoms is not so insidious when it is located lower down. When cancer of the rectum exists and involves the sphincter muscles, great pain is experienced, which is increased by walking, standing, or sitting, and it is also increased during the act of defecation. There is a greater disposition, too, to strain at stool, and generally, after sufficient length of time, the adjoining organs are implicated; and yet physicians are frequently misled by the statements made by the patient, because examination externally reveals nothing either in cases of cancer of the rectum or of the sigmoid flexure. In making out a diagnosis of cancer in this locality, it must be remembered that an impaction of fæces in the flexure will give symptoms very much like those of malignant trouble. Even admitting that the tumor can be felt in the line of the colon, we must determine, if possible, whether it be carcinoma or simple impaction. It is believed

by many that the diagnosis in these cases can be cleared up by the persistent use of irrigations and cathartics. This is a very good course to pursue, and yet we may be deceived in the matter of clearing up the diagnosis. I have already recited a case of an accumulation in the sigmoid flexure, superinduced by the eating of oatmeal, which terminated in death, notwithstanding that constant irrigation through a long tube was kept up and free purgation attempted.

The distinction between a cancer of the transverse colon and cancer of the ascending colon, descending colon, or sigmoid flexure, can be drawn by the slight or complete immobility of the tumors in the latter. Now, to apply this point in the matter of diagnosis, it can be said that the sigmoid flexure would be the most movable, since this portion of the bowel has a long mesentery, and is, therefore, capable of being displaced, and yet there is no way of satisfying one's self upon this point except the introduction of the hand into the rectum and the feeling of the sigmoid by the fingers. A method that is often practiced to determine at what point in the intestinal tract the carcinoma is located is to inject water into the bowel, and to notice the height to which it will go. It is argued that the less the amount of fluid that can be injected, and the more rapidly the water is discharged, the lower the site of the obstruction. If the growth be located in the sigmoid flexure, and the rectum be injected, it will be observed that just so soon as the walls of the rectum proper are distended the water will pass away; or, if a bougie or tube is used, there will be difficulty in getting it to enter the sigmoid because of the presence of the mass, and if water is thrown just as high as it can be got in this kind of case, it will immediately pass back. This might determine that there was an obstruction in the sigmoid, but it would be of little diagnostic value in telling us of what character the obstruction was.

Prognosis.—The prognosis in cancer of the sigmoid flexure is very bad. So far as its local treatment is concerned, scarcely any good can be accomplished save by washing the cavity

out; and yet this is dangerous, as the least force used might push the instrument through the peritonæum. As in all cases of cancer, anything looking to its relief or cure must be referred to the surgeon. There are but two operative procedures for cancer in the sigmoid flexure: 1. Colotomy. 2. Extirpation.

In the chapter on cancer of the rectum I gave it as my opinion that colotomy was ill advised, save in exceptional cases. In cancer of the sigmoid flexure I would certainly double my objections. As we have demonstrated that there is no great pain accompanying the cancer at this seat, it would not be proper to open the colon until stenosis had taken place sufficient to obstruct the passage of fæces. Then the question is, Are we warranted in doing a colotomy as occlusion approaches, or when it becomes total? I recognize the fact that I am differing from many authorities who have written on this subject when I take a negative position. We have a cancer here located in a movable gut, with an early death facing us. Is it worth while to subject this unfortunate patient to a colotomy who has but a few days to live? If the obstruction is total, the question of an operation should be proposed not only to the patient but also to his family, with the disadvantages of it brought clearly to their minds. If for other reasons outside of a medical or surgical view there is a necessity of prolonging the patient's life, it may become unavoidable to do a colotomy. I think, however, this question should be settled by the patient rather than by his physician.

In determining between the two colotomies, where the cancer is located in the sigmoid flexure, I am satisfied that the lumbar operation is the best, if for no other reason than that the opening into the colon would not include the disease, or be encroached upon by it.

Extirpation.—The question often arises in the mind of the surgeon what operations are justifiable and what not justifiable. No surgeon should be guilty of doing an operation where he recognizes that no good can be accomplished by it;

and in dealing with the subject of excising the sigmoid flexure for cancer, I would be almost inclined to class it as a piece of unjustifiable surgery were it not that several cases are reported where excision has been practiced successfully. The most notable case of the kind on record is the one reported by Dr. W. T. Bull, of New York. I wrote to the doctor to send me a reprint containing a description of this remarkable case, and I herein append his answer:

"New York, *January* 7, 1892.

"Dear Dr. Mathews: The case you refer to I can at present give you only an outline of from memory, for I have not the notes written up properly. A woman, aged fifty, on the fifth day of an acute intestinal obstruction was subjected to abdominal section, under the impression that the small intestine was compressed between the pelvis and a large fibroid tumor of the uterus. She was *in extremis*, and vomiting fæcal matter. An annular stricture (cancerous by microscopical examination) was found; an artificial anus was made by opening and securing to the skin in the middle line the large intestine just above the stricture. This was in March, 1886. She made a good recovery, but the carcinoma grew and projected out of the artificial opening and obstructed it. In January, 1887, the growth, including four inches of the sigmoid flexure, was excised. The ends, being too short for resection, were both brought out at the middle line. Prompt recovery and good functions of the new anus. I made an effort in November, 1889, to close up the anus by the aid of Dupuytren's enterotome, and by laparotomy and suture of the opening. This failed. Her general health continued good, and the inspection of the abdomen showed no signs of the return of the cancer nor secondary deposits. In October, 1889, I succeeded by laparotomy in making an intestinal anastomosis (Abbe's catgut rings), and in closing up the artificial opening entirely. She was in good health for the following two years; then signs of contraction of the anastomotic orifice presented themselves and grew worse,

and she had, in October and November, 1891, several attacks of mild obstruction, which were relieved by enemata and calomel. On December 22, 1891, I tried, by reopening the abdomen, to relieve the condition, but the adhesions were so extensive and so firm that I could do nothing, and she died from this attempt on the fourth day of peritonitis. The autopsy showed *no trace of cancerous* disease in any organ. The anastomotic opening, made two years before, two and a half inches long, was contracted so as to admit the index finger, and the small intestine or several loops thereof were entangled in a maze of dense adhesions. The carcinoma was excised in January, 1887. She was in good health up to October, 1891, and there was no sign of recurrence at the autopsy in December, 1891, being nearly five years.

"Very truly yours, W. T. Bull."

I shall make this concise statement by Dr. Bull of this case suffice for anything that I have to say in regard to the necessity and method of operating on such a case. The doctor is to be congratulated upon so good a result in so difficult a case, and I must say that it was obtained by the brilliant manner in which the operation was done.

Syphilis in the Sigmoid Flexure.—That the sigmoid flexure is a seat for syphilitic deposit can be maintained. In dealing with the subject of stricture of the rectum, I state that, in my opinion, more than one half of the strictures found there are due to syphilis; therefore it is easy to understand how the sigmoid flexure, or a portion of it at least, could be included in the disease. The early symptoms of syphilitic deposit in any portion of the gut are very obscure. Indeed, our attention is not often drawn to it until the ulcerative process has set up, or a strictured condition results. In cancer of the colon, I have said among the early symptoms we find diarrhœa. I believe that in syphilitic deposit the opposite condition obtains—viz., constipation. Admitting, then, without argument, that syphilis can affect the sigmoid flexure, we can very well understand how serious would

be the trouble in such a case. After an observation of fifteen years, covering many cases, I am constrained to believe that syphilitic ulceration of the rectum which has resulted in a strictured condition is not curable. The idea that by the administration of iodide of potassium and other antisyphilitic remedies reabsorption of this deposit takes place is, I am sure, a mistake. The earlier symptoms of a syphilitic deposit along the route of the colon, whether attended with ulceration or not, presents very much the same symptoms as a simple inflammation or ulceration. It is the common observation that ulceration of a specific character in the rectum goes on rapidly to a constriction. Therefore we can understand how rapidly this stenosis would occur when the ulceration is located higher up. I have observed many cases of syphilis of the rectum where the constrictions took in the whole length of the rectum proper, and included a portion of the sigmoid.

Treatment.—If the sigmoid flexure is included in this syphilitic deposit which may begin in the rectum, it would hardly be detected until an ulceration and a subsequent stricture existed; therefore, outside of the local application of a soothing medicament and a cleansing of the parts as far as practicable, but very little can be done. I have tried the constitutional plan of treatment many times, and have got very poor results. Therefore I will simply consider the necessity of an operation when the upper portion of the rectum or the lower portion of the sigmoid flexure is being closed by a constriction or a total occlusion takes place. In cancer located in the sigmoid flexure I have been chary about advising an operation at all, but in a close constriction or occlusion by syphilitic deposit I am very positive that an operation is not only warrantable, but should be done; and that operation is colotomy. Under almost every other condition I have objected to the operation, but in this character of disease I am sure that not only theoretically is it the proper thing to do, but practically it has been of wonderful benefit. If a surgeon would compare his results as obtained by colotomy

in cancerous stricture and syphilitic stricture of the rectum, he will congratulate himself upon the good results he obtains where syphilis has been the cause of the stricture, and deplore his results where cancer has been the cause. If this be true when the strictured condition is in the lower part of the rectum, it is doubly true when the constriction is higher up in the rectum, or when it includes the sigmoid flexure. Where a colotomy is done for cancer, it does not in any sense tend to cure the disease, and in my cases it has not mitigated it to the extent that some claim; but if the operation is done for a syphilitic occlusion of the gut, the patient may live a long time, perhaps his allotted days, after colotomy is done, the operation having relieved him of the dangers of an obstruction; and the disease itself may advance no farther. I have reported one case where a syphilitic stricture at the entrance of the sigmoid flexure was broken down by introducing my hand and arm into the rectum and practicing forcible dilatation with the fingers. In the selection of the proper method of doing the colotomy in cases of syphilitic stricture I would be inclined to advocate the inguinal operation here in preference to the lumbar, more especially for the reason that there is no disease like cancer to extend to and embrace the opening.

Foreign Bodies in the Sigmoid Flexure.—Because of the peculiar anatomical construction of the sigmoid flexure it may become the receptacle of foreign bodies, and by the inflammatory act or otherwise they may be held there. In such an event there can be but one operation done with a view to their extraction—viz., cutting down upon the sigmoid and taking the foreign body out through the opening and closing the incision at once. As we have before stated, the sigmoid may be the seat of impacted dry fæces. This condition can be usually overcome by irrigating constantly the sigmoid flexure by means of the Wales rectal bougie and the Davidson syringe. If, however, the impaction has as a nidus some foreign substance, such as a small stone or hair, which has been swallowed, or possibly teeth, etc., it might become necessary

to do a similar operation as suggested for foreign bodies, though I have never seen such a case reported.

Volvulus of the Sigmoid Flexure.—I shall only consider the operative treatment of volvulus of the flexure, and for the elucidation of the subject I can do no better than to embrace the views of Prof. H. Braun, of Königsberg, as taken from a late article in the Archiv für klinische Chirurgie. The author reports three cases of volvulus of the sigmoid flexure treated by surgical measures, two of which recovered, and presents the statistics of thirty-one cases operated upon by various surgeons during the past thirty years. He states that the diagnosis of this condition is possible in a comparatively frequent number of cases, and regards the following points as deserving of especial consideration :

"1. The history given by the majority of these patients is that they have suffered for a long time from sluggishness of the bowels, and sometimes from more or less persistent constipation, frequently difficult to relieve, and attended with distention and tenderness of the abdomen. In many of these cases the last severe attack occurs without any apparent cause, sometimes after severe bodily exertion, sometimes after ingestion of indigestible substances.

"2. The age of the patients is of diagnostic significance, most of them being advanced in years. Among fifty cases of volvulus of the sigmoid flexure collated by the author there were only two persons below the age of twenty years.

"3. The sex of the patients is to be taken into consideration. According to the above statistics of fifty cases, forty occurred in males and only ten in females. These figures agree with those furnished by Lichtenstern and Treves, but are opposed to those of Rokitansky, which, however, are based upon a much smaller number of observations.

"4. The thorough examination of the abdomen is of utmost importance. Frequently the markedly distended sigmoid flexure can be wholly or in part mapped out by palpation. Von Wahl has especially called attention to the value of this symptom.

"5. Vomiting is a symptom which deserves attention in these cases. It is present in most cases of intestinal occlusion, and frequently becomes stercoraceous. In severe and even fatal volvulus of the flexure it may be entirely wanting; usually, however, it is present, but very rarely assumes a feculent character. Sometimes it occurs at the beginning or toward the end of the other symptoms of obstruction.

"6. Another point which may be utilized for diagnostic purposes, but to which attention has not heretofore been drawn, is the demonstration of an accumulation of fluid in the abdominal cavity. This necessarily takes place whenever portions of the intestine with their attached mesentery are strangulated, as the result of stasis of the blood in the vessels of the affected parts; its origin is therefore entirely analogous to that of the fluid in a hernial sac in cases of strangulated hernia. This effusion of fluid may be so considerable in amount that it can be detected by palpation, as the author's experience has shown. Of course, the symptom is not pathognomonic of volvulus of the sigmoid flexure; but is confirmatory of strangulation of a large section of intestine when taken in connection with other symptoms, and after the presence of ascites or peritonitis has been excluded, which can usually be done without difficulty. Aside from volvulus, the author has observed this condition in a case of laparotomy for strangulation of several intestinal coils by a Meckel's diverticulum.

"As regards the methods of treatment in cases of volvulus of the sigmoid flexure, we should first attempt to overcome the torsion of the gut by injections of water or insufflation of air. That these measures have a favorable effect may be assumed *a priori*, but is rendered more probable by the special experiments of Heiberg, which showed that the intestines in dead bodies could be rotated on their axis by insufflation of air. Aside from these measures, the taxis has been recommended by some authors, although little can be found in the literature as regards its method of application and results. Rendu advised that after introduction of a rectal tube the

patient should be placed on his abdomen and then suddenly turned from the right to the left side. Jonathan Hutchinson suggested that after the patient had been profoundly anæsthetized the abdomen should be vigorously kneaded, and the intestines forced upward, downward, and toward the sides; the patient should then be turned on his abdomen and shaken forward and backward, while large enemata were to be given.

"As a further means of treating volvulus, some authors have recommended puncture of the gut as a proceeding unattended with danger. Heiberg, on the ground of his experiments on the cadaver, even assumes that an 'untwisting' of the intestine may result directly from the punctures. In Braun's opinion, this measure is admissible if the distended intestinal loops can be distinctly felt through the abdominal wall. Too much should not, however, be expected from this auxiliary, since he has found that only a small portion of the gut can be emptied in this manner, and hence only a slight reduction in volume of the abdomen can be produced. Multiple punctures would give a better result, but the danger of infection of the abdominal cavity is thereby increased. Although in the majority of the cases the abdomen may be repeatedly punctured in the same individual without injury, the development of septic peritonitis from defective closure of the puncture can not be excluded with certainty. In a number of the cases tabulated by Braun the punctured intestine had to be sutured, because the openings had failed to close spontaneously. This is most likely to occur if the intestinal walls have lost their contractility.

"If these measures fail to effect a cure within a short time, as is frequently the case, we have to choose between laparotomy, with direct removal of the obstruction, and enterotomy. If the diagnosis is quite positive, and the patient is in a hospital where sufficient assistance can be secured, it will be best to perform laparotomy, as was done with success in two of the author's cases. If the diagnosis is doubtful, and the external conditions unfavorable, an artificial anus should be established in cases where the abdomen is greatly distended.

If, during the performance of this operation, we find evidences of firm strangulation of the gut, laparotomy should be resorted to at once, or soon after, for removal of the obstruction. These evidences are a bluish discoloration or gangrenous appearance of the portion of intestine protruding into the abdominal wound, or the demonstration of a constricted and distended intestinal loop, or the outflow of a large quantity of bloody, serous fluid.

"The question whether in volvulus of the sigmoid flexure a cure can be obtained by enterotomy alone can not be settled by statistics, since in cases running a favorable course after this operation the diagnosis that a torsion has existed can never be made with certainty. In establishing an artificial anus it is also possible that the distended sigmoid may be sutured to the abdominal wall, as has happened in several instances, and then the twisted loop would be fixed in a still more abnormal position. This faulty fixation is the more likely to occur since the sigmoid flexure is quite frequently greatly distended, while the intestine above the volvulus is empty.

"In performing a laparotomy, the incision in the linea alba is most useful, as by lateral incision any existing volvulus is more likely to be overlooked. To release the strangulation, the tympanitic flexure should at once be drawn outside the abdomen, since, in consequence of its marked distention, it can not be rotated into its normal position within the abdominal cavity. The withdrawal of the loop may be rendered difficult by the shortness of the mesentery of the descending colon or the presence of firm adhesions, but, aside from the above reasons, it is desirable, as enabling us to observe any structural changes of the gut that may be present. Gangrene occurs chiefly at the place where both segments of the flexure have been twisted on each other. Besides this, there may be found linear tears of the serosa, which should be sutured if met with during the operation, and may even necessitate resection.

"If, after release of the torsion, the intestinal walls are

found to be in a healthy state, the sigmoid flexure may be immediately returned to the abdominal cavity, a proceeding which is sometimes attended with great difficulties. It is frequently necessary first to puncture the distended and elongated flexure with a fine needle in order to evacuate the gas, and sometimes to suture these openings for the purpose of preventing escape of liquid fæcal matter. In some cases incisions may even be required, which are best made in the longitudinal axis of the gut on the side opposite to the mesenteric attachment, and closed with a double suture. If the higher-lying intestinal sections are markedly distended, they sometimes also require to be incised, although this is not likely to be of much value if peristalsis is much impaired. Senn, who regards incisions of the gut as necessary in all cases in order to effect reposition, advises that the patient be placed on the side, and then by raising up the intestinal coils the contents will gravitate toward the openings whence they are allowed to escape. The simplest procedure for this purpose, and one which is sufficient for the majority of cases, is to introduce a tube into the rectum at the beginning of the operation, through which the gases and fluid fæces are frequently evacuated immediately after the removal of the volvulus. If these evacuations do not occur spontaneously, it may be advantageous to irrigate the gut from below.

"After reposition has been effected it is desirable to adopt precautions to prevent a recurrence of the volvulus. Cases of this kind have been reported by Roser, Obalinski, and Nussbaum. Roser suggested that the mesentery be attached to the peritonæum of the left abdominal wall by sutures, so that the upper segment of the flexure, which is apt to be the most mobile, is fixed to a sufficient extent. This suggestion has not been followed by others. In one of his cases Braun, after untwisting the gut, sutured the colon portion of the flexure over an area of six centimetres to the left side of the abdomen by eight silk sutures; the result was favorable, and this manner of fixation seemed to be more secure than attachment of the mesentery to the abdominal wall. Recently Senn

has recommended for the same purpose that the mesocolon be shortened by establishing a fold parallel to the axis of the gut, but Braun thinks this is only practicable in exceptional cases. In his opinion, the predisposing factor to the development of volvulus is not, as Senn assumes, a long mesocolon, but in the vast majority of cases a small mesentery which has undergone further shortening as the result of peritoneal inflammation. In such cases if we follow the suggestion of Senn and shorten the mesocolon, a flexion of the gut must result.

"The steps of the operation are somewhat different if the site of volvulus or any other point of the flexure is found in a gangrenous condition. If the gangrene is not perfectly localized, and suture of the part is not entirely free from risk, it is best to resect the entire flexure—the more so since the changes in the mucous membrane are often more marked than would appear from inspection of the outer surface of the gut. Extensive defects of the mucous membrane and dirty, grayish, fibrinous exudations are not infrequently met with in cases of volvulus of the flexure, where the exterior of the gut seems but little changed. Such lesions would certainly have healed with difficulty, if at all susceptible of a cure. Whether after resection it is preferable to directly unite the ends of the gut, to establish an artificial anus, or to perform entero-anastomosis according to Senn's method, will depend upon the character of the intestines and the strength of the patient. The formation of an artificial anus is accomplished in the most rapid manner, and makes the slightest demands upon the patient's vitality, and should therefore be preferred in the majority of cases. If the volvulus can not be removed, and the intestine is still in a good condition, entero-anastomosis rather will be indicated. The suggestion of Treves, to puncture the intestine and then perform colotomy at the descending colon should not be adopted.

"A study of the statistics by the author shows that of seventeen cases in which the volvulus was removed by operation, six were cured (35·5 per cent) and eleven died. In

two cases, where laparotomy had been performed and the torsion removed, a recurrence of the volvulus took place—in one immediately after the operation and in the other four months later. Both patients died, one of them being subjected to the second operation. Four cases, in which the volvulus was not discovered during operation, terminated fatally. Of two patients on whom resection of the sigmoid flexure was performed, one died on the thirty-second day from perforation of a gastric ulcer, and the other was cured with formation of an artificial anus. Eight cases in which enterotomy was done died shortly after the operation. The author warns us not to conclude from this statement that the establishment of an artificial anus in volvulus of the flexure is entirely without value. He is convinced, however, from a study of the results, that many of these patients could have been saved by an early resort to laparotomy or resection of the flexure."

Since the first edition of this book was issued the author has received many letters of congratulation upon this special chapter. He has been pleased to note also that many physicians have reported successful cases treated by the author's plan. He feels, therefore, that his investigations in this line have not been in vain, and begs to return thanks to his professional friends for the most thorough trial that they have given his suggestions in treating the sigmoid flexure.

Dr. Howard Kelley, of Johns Hopkins Hospital, has been especially interested in a new method of examining and treating diseases of the rectum and sigmoid flexure. He has worked at this subject for many years, examining his patients in the knee-breast position with special instruments which he devised for the purpose, and which, in his hands, he claims, give perfect results. With these instruments, which are hollow metal cylinders of varying length and diameter, and with his patient in the proper position, he can bring into view the whole rectum and a considerable portion of the sigmoid flexure, recognizing lesions which, with the instruments usually in vogue, would be perfectly impossible, as, for in-

stance, locating a stricture high up in the rectum or in the sigmoid flexure, mapping out areas of ulceration, demonstrating the extent of a proctitis or sigmoiditis, differentiating a stricture of organic origin from one caused by pressure of new growths of the other pelvic organs, etc.

Illumination is best obtained by using a common head mirror reflecting an electric light, which is held by the short handle, by an assistant, just over the buttocks of the patient; a portable storage battery and an electric headlight carrying a mignon lamp are also useful.

Examination.—It is not necessary to use an anæsthetic. The bowels must be well evacuated and the bladder empty. The ordinary examining table or a kitchen table is most convenient, the room being darkened. The patient is placed in the knee-breast position, the buttocks projecting a little; the buttocks are separated, the anus exposed, and the dilator well coated with vaseline is introduced with a boring motion until the sphincter is sufficiently dilated.

The speculum is well coated with vaseline and the handle grasped with fingers and palm, the thumb retaining obturator in position, and is introduced slowly with a steady, firm pressure into the bowel; the obturator is then removed and air allowed to enter and distend the lumen of the gut, this process being much facilitated by the knee-breast position, the tendency in this position being for the intestines to gravitate toward the diaphragm and give a larger free space in the pelvis. In introducing the speculum one must remember the direction of the rectum, and that the promontory of the sacrum curves out prominently above the pelvis and can be recognized as a rounded projection into the lumen of the intestine; the speculum is certain to strike it, and must be gently lifted over.

Also, that the rectum and sigmoid flexure are normally more or less collapsed, with the folds lying in apposition, and that for the further introduction of the speculum the lumen of the intestine must be well distended. For this reason the knee-breast position is necessary, causing the intes-

tines to gravitate toward the diaphragm, and acting somewhat as a suction apparatus, drawing in air as they recede. If, then, on attempting to pass the speculum a point is reached beyond which the lumen seems entirely closed and impassable, wait for a few moments, and it will generally be found that the speculum passes easily.

CHAPTER XX.

PROLAPSUS ANI.

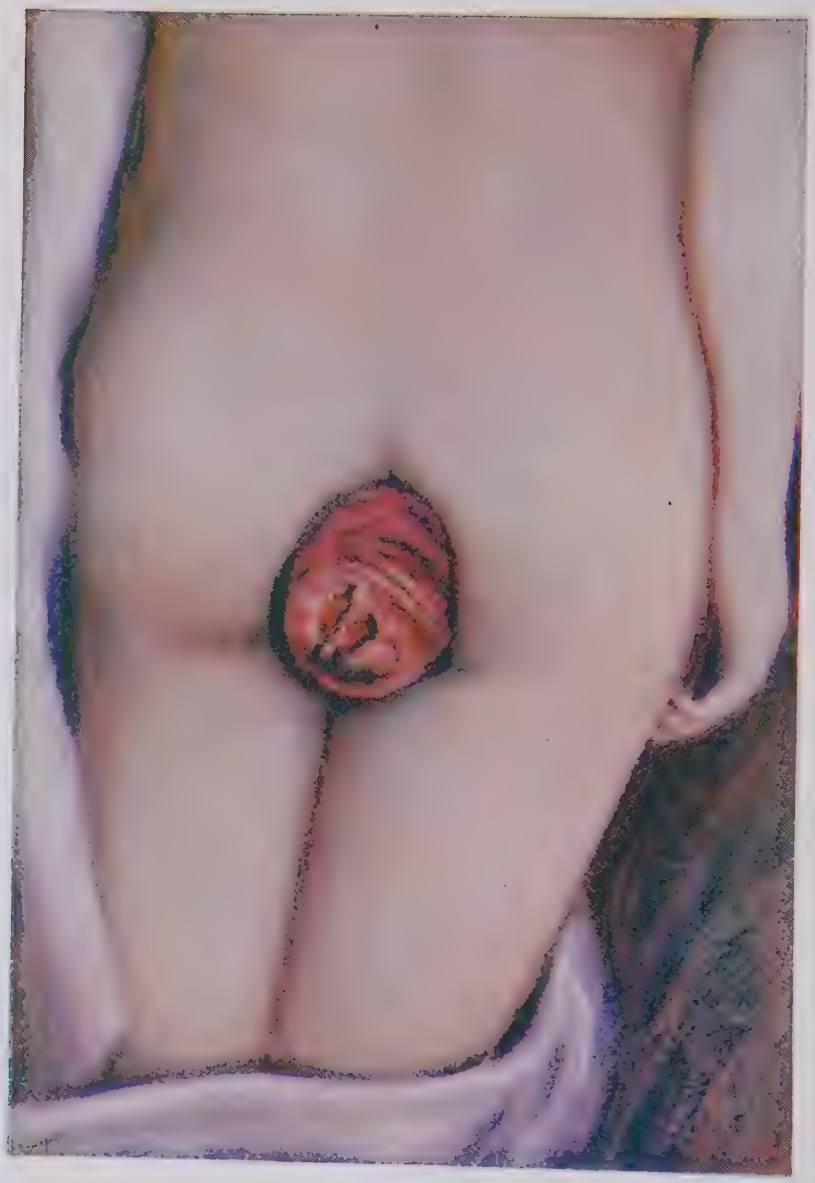
I USE the term prolapsus ani in preference to procidentia recti for two reasons: First, it is commonly understood by the physician, when speaking of these cases, that we refer to the prolapse of the mucous membrane of the bowel. Second, because this is the form with which we most frequently meet. I must say that procidentia of the rectum is a very rare disease. In my own practice I have seen but three cases. But so far as prolapsus ani is concerned, it is much more common, especially when we include children in the list. The fact that in children there is no distinct curve to the sacrum, and no stout resisting sphincter muscle at the outlet, together with the fact that they generally strain violently at stool, accounts for this condition. Most any physician that has had much practice can recall perhaps a number of cases of prolapsus ani in children, and it is not regarded as a very serious affection. Mothers, however, are greatly alarmed when suddenly discovering the rectal prolapse in their child. A messenger is generally sent for the physician, but by the time he has arrived the protruding mass has returned of its own accord. I shall never forget a case of this kind that occurred in my early practice. I was sent for to come hurriedly, a distance of several miles, to see a child to which had happened some terrible accident. Upon my arrival, I found the mother in great distress. She said to me between her sobs that the body of her child had come down and that she feared that it was in a dangerous condition. The little fellow was lying on the bed, and I could see the prolapse before I got to him. My first impulse—which I carried into execution

—was to pick him up by the heels and shake him that the prolapse might go back by gravitation. No sooner had I done this than the mother, approaching from behind, dealt me a terrific blow on the back of the neck and knocked me down. I fell, with the child under me, but when I regained myself and lifted him up the prolapse had disappeared. Of course she begged my pardon, but it did not relieve the sting.

I recognize the fact that, anatomically, the term prolapsus ani is an incorrect one, and yet usage permits its adoption. However, in dealing with the subject, I shall only refer to the prolapse of mucous membrane out of the rectum, and shall not include internal hæmorrhoids, which are frequently prolapsed, and very often mistaken for a true prolapse of the bowel. It would seem strange, considering the literature upon the subject, that this mistake could be made; but it is of very common occurrence for me to see such cases that have been so diagnosticated.

Case.—Two years ago I received a letter from a physician in a distant State, saying that he had a patient that he desired to refer to me for an operation, or at least for my advice whether an operation was advisable or not. He mentioned the fact that he had never examined the patient himself for the reason that he did not do such surgery, but was informed by the patient that a year previous to that time, while living in a distant city, he had consulted a surgeon, who made an examination and advised him to be operated on for a large prolapse of the bowel. The operation was undertaken, but he was allowed to come from under the influence of the anæsthetic, when he was told that it was impossible to remove the prolapse. But since that time it had become very distressing and caused him a great deal of pain and uneasiness, and he desired a second attempt to be made, hence was referred to me. Upon his arrival he detailed to me very much the same as what the doctor had written. I did not deem it necessary to make an examination until he was placed under chloroform. He was prepared for several days, and upon the day set for the operation I found him nervous and agitated,

Plate VI.



PROLAPSUS ANI. (MATHEWS.)

laboring under the belief that he would die under the operation. I succeeded in quieting him of his fears, and he was given the anæsthetic. When I divulsed the sphincter muscle in order to bring down the prolapse, what was my surprise to find a large mass of hæmorrhoidal tumors presenting! It was very true that they were in size much larger than is ordinarily found, but there was no prolapse of the bowel proper at all. I transfixed and tied each tumor, then cut off each one of them and returned the stumps into the bowel. He did not have an untoward symptom, and went home at the end of two weeks. I simply cite this case to show not only that these mistakes are often made, but also to advise that the operator be very careful in taking the opinion of the patient, or listening to his stories in so far as the diagnosis is concerned.

Allingham deals with *procidentia* as being a descent of the *whole* circumference of the rectum. For the sake of division this is a very good idea, and yet we can have a severe form of procidentia without having the whole circumference of the rectum included. He says this may take place in three ways: First, when the entire circumference of the mucous membrane, or all the coats of the rectum, are clear outside of the anus. Second, when the upper part of the rectum descends through the lower part, and then appears outside the anus. Third, when the upper part of the rectum descends through the lower part, but does not appear outside the anus. I am much inclined to believe that the term prolapse and procidentia would be sufficient to explain the condition that happens. The two latter varieties described by Allingham are really cases of intussusception, and do not fall in the class that we are describing. For the sake not only of brevity but also of treatment, I think it best to rule out these two during this consideration. Indeed, I think the term procidentia, as applied to the rectal prolapse, is a faulty one at best. It was borrowed from uterine nomenclature and should be returned to it. To my mind, the terms *simple prolapse* as referring to the protrusion of the mucous membrane alone, and *compli-*

cated prolapse where it was accompanied with invagination, etc., would better express the real condition. Some authors designate them as "partial" and "complete," and yet so very few cases of procidentia are complete that it amounts to an anatomical curiosity. Indeed, Boyer, who up to the publication of Nélaton's Surgery was the greatest French authority, denied that it was possible for the whole rectum to be displaced from its connections and forced out through the anus in the form of what we call "complete prolapse." Had he been content with this simple statement, many would have been prepared to accept it; but he went further than this and said that all anal protrusions consisted of mucous membrane alone, and that the external connections and attachments of the rectum rendered its extrusion in totality an impossibility. Cruveilhier was the first authority, to my knowledge at least, who, by dissection of the part of the dead body, proved that complete prolapse of the rectum could take place, and yet the condition is so rare that a surgeon scarcely in a lifetime would meet with it. In dealing with the two forms of prolapse, I would say that the simple variety was that of mucous membrane alone, and the complicated included more or less of the peritoneal sac. Really this is the most important thing to be known in making a diagnosis, especially when treatment is under consideration. Esmarch says that when prolapse is extensive a pouch of peritonæum is formed by the anterior wall, in which a coil of small intestine or the bladder or even the ovary may be lodged. This would indicate to us the danger in dealing with the procidentia at all; but the one particular thing which we wish to know is, whether a pouch of peritonæum itself is included in the prolapse. Therefore, as the diagnosis is the most important point of this trouble, I can do no better than to quote from Van Buren when he says:

"Of complete prolapse, in which the whole thickness of the bowel is included, there are three distinct varieties, each of which the well-informed surgeon should be able to distinguish:

"1. The most common form, in which the greased finger, passed carefully around the base of the tumor, recognizes that its external surface is absolutely continuous with the membrane that lines the orifice of the anus without the existence of a sulcus. Here the bowel began to slip out originally by its very lowermost portion, and this had gradually formed the outer layer of the protrusion, the gut, as it is forced down from above, passing within it. This form of complete prolapse follows simple protrusion of the mucous membrane, or partial prolapse when the latter has been neglected; it results from a persistence of the causes which are keeping up the latter, and effecting its gradual increase by dragging upon the outer coats of the gut when the submucous connective tissue will no longer yield. Such a tumor always contains more or less peritonæum, and it is important that you should never lose sight of this fact. The peritonæum, you will remember, surrounds the rectum on all sides and extends downward to an oblique line three inches and a half from the anus in front and scarcely five behind. The peritoneal reflection, at the base of a protrusion of this kind, is therefore always larger in front.

"2. Where the finger can be inserted into a groove alongside of the base of a tumor, so as to recognize a distinct sulcus of more or less depth, at the bottom of which, if not too deep, the lining membrane of the gut can be felt as it is reflected from the base of the protruding tumor. In this case the rectum has begun to fold upon itself. In other words, to become invaginated, or, in the language of the day, 'telescoped,' the upper part of the bowel always passing within the lower, at a point more or less distant from the anus, yet generally within the reach of the finger.

"3. In this variety the finger can be inserted through the anus alongside of the protruding tumor, but can not reach any line of reflection of the mucous membrane of the rectum upon the tumor; the latter, in fact, may not even as yet have protruded externally through the anus, but may be felt only as a polypoid mass, occupying the cavity of the rectum.

Here invagination has taken place higher up in the colon; has possibly commenced in the cæcum or even in the lower part of the ileum, which, sucked through the ileo-cæcal valve, has been carried with the cæcum itself up the ascending colon, and, the connecting attachments gradually yielding, the invaginated mass has been propelled along the whole length of the colon and finally presents itself in the rectum, or may be possibly protruded externally. This almost incredible displacement of the parts has now been certainly recognized in so many recorded cases, examined after death, that it were inexcusable to fail to recognize it during life."

Now, although these three varieties of complete prolapse are simply examples of the same affection, and differ only in degree, they are so very different from what we understand prolapsus ani to be, that I really believe they should be relegated to another department of surgery.

There could be no objection, in the consideration of rectal surgery, to dealing with prolapse of the rectum alone, or prolapse of all the coats of the rectum; but the other two varieties are very different conditions, and should be considered as such.

Diagnosis.—It might appear a simple matter to diagnosticate a case of simple prolapse of the rectum, and yet, as I have intimated, mistakes are very often made. In children it is an easy matter to come to a correct conclusion, from the fact that we do not anticipate meeting with hæmorrhoids, etc., with which simple prolapse is frequently confounded. Therefore I would suggest that, in the adult, the patient be requested to take an enema and to strain down, and then the surgeon to inspect the protruded part. If it be a prolapse of the mucous membrane, it will occupy the most or all of the circumference of the bowel, with a certain degree of regularity. The gut will be of a bright-red color, and if placed between the fingers its folds can be easily pressed together, there being no well-formed tissue existing. In protruded hæmorrhoids the condition is very different. We have an irregular prolapse, which does not

include the circumference of the bowel, but oftentimes exists only on one side; and if the parts are taken between the fingers a well-organized tumor can be felt, which can be circumscribed, and the color is a dark blue. The clinical features, in a complete prolapse of the rectum, are of either one of the three varieties mentioned by Van Buren, and are very different from what I have described. To keep these three varieties in mind it is best, as he says, to remember, viz., the first and most common, where there is no sulcus at its base, but pretty certainly a pouch of peritonæum within its substance; the second, where there is a sulcus, but the finger when inserted can readily touch the bottom of the groove; and third, where the finger can reach no line of reflection, and the history of the case and palpation of the abdomen may complete a diagnosis of intussusception, commencing high up in the canal.

I think that one of the most prominent, and at the same time most important, features to be taken into consideration in differentiating between simple and complicated prolapse of the bowel is the size of the mass which protrudes. Simple prolapse is never very large, and where any of the coats of the rectum or all of its coats are included, the protrusion is much larger. A simple prolapse of the bowel does not usually remain out for any length of time, and a prolapse containing the coats of the rectum is very apt to remain out an indefinite length of time, or until it is returned. There are a few rare instances recorded where the whole bowel has come out and quickly returned.

Procidentia varies very greatly in size, although any form of procidentia is larger than a simple protrusion of the mucous membrane, and it may be as large as the fœtal head. The case which I record, and which will be observed as one of the colored drawings, was as large as the ordinary fœtal head and much longer.

I have said that the statement of the patient may frequently mislead us in making up our opinion as to what really protrudes, and that in a majority of cases it will be a

prolapse of hæmorrhoids instead of a true prolapse of the bowel. There is one special point that I wish to speak of here, in making an examination, which can be best detailed by giving a case.

Case.—A young lady was brought to my office a short time ago, when a clear history of a protrusion from the bowel was given. I supposed, of course, it was hæmorrhoidal. She mentioned the fact that it would remain out for quite a while unless she reduced it. I directed that, after the evacuation of her bowels the next morning, she should allow the protrusion to remain out, and that I would call by at a certain hour and examine her. I went at the time named, and she said it had remained out about twenty minutes but had gone back again. I inserted my speculum, and when I distended it and brought into view the surface of the rectum, no hæmorrhoidal tumors could be seen at all, but, to the contrary, the mucous membrane was perfectly smooth, and yet to this ocular inspection no condition could be seen which would indicate a prolapse. Now, the point which I wish to impress is, that it is impossible to make out with the speculum any special condition which would lead us to believe that the bowel would prolapse, or aid us in the least in making up a diagnosis. This is the second case in my experience where I have been deceived as to the nature of what it was that really prolapsed at stool in my patient—that is, I mean to say, the second case where a prolapse really did occur which was not hæmorrhoidal. Therefore I would impress the fact that the best way to substantiate the belief that a prolapse of the bowel exists is to see the bowel when it is prolapsed.

Causes.—In children a prolapse of the bowel is usually the result of straining at stool, which may be induced by the existence of worms, loose bowels, etc. Very slight causes will produce the condition in children when the same causes would not produce it in the adult. I believe that in women, especially those who have borne many children, prolapse of the bowel is more likely to occur. In men, the pelvic muscles aid very materially in keeping up the rectum. I have parents

very often say to me that they are not surprised that their child has prolapse, although perhaps grown, as in its early infancy it suffered from the same thing. This is a mistake, as it is to hæmorrhoids they are referring in the child *grown*, and to a prolapse in the child *as an infant*. In the adult a prolapse may be brought about by excessive straining, caused by dysentery, diarrhœa, worms, an enlarged prostate in the male, stone in the bladder, a polypus, etc., and yet without any of these causes we may witness a case of the kind. It is said to be often the result of strumous inflammation of the intestines. I am sure that the notable case which I here record was due to a syphilitic inflammation of the bowel.

Case.—The following notes have been prepared by Dr. E. P. Miller, the very efficient Interne of the Louisville City Hospital, who has assisted me materially in the case. "Kate W., white, aged twenty-six, admitted to City Hospital, November 14, 1891. Condition at time of admittance: A large growth about the size of a child's head, protruding from rectum, which was in fact a prolapsus recti, with great infiltration and an apparent overgrowth of all the tissues involved. The mass filled the whole of the vaginal cavity and protruded through the vulva. The peritonæum was torn through, except a small transverse band anteriorly, by the growth, which was constantly increasing in size. There was some irritation of the bladder; abdomen distended; evacuations of a watery mucous character. The patient suffered great pain constantly in her abdomen and legs, and was unable to walk. She could not lie on her back on account of the pain induced by the pressure of this enormous growth.

"*Previous History.*—Father dead; cause, senility. Mother dead; cause unknown. Three of the family living; one has phthisis, the other two healthy. Three of the children dead. One died of tetanus. Cause of death in the other two unknown. Patient was in good health during infancy and childhood. At the age of fourteen she was seduced, and in a short time a venereal sore appeared. She was brought to the City Hospital for treatment, and remained here for six

months. At some time during her stay at the hospital she was operated on for a large condylomatous growth on the right vulva. After leaving the hospital she went to her friends and lived for three or four years, after which she entered upon a sporting life. This life was kept up for about three years, and during the time she contracted a disease which appeared in the form of an eruption all over her body. We must suppose that it was syphilis, as there was a general glandular infection and alopecia following. At the age of twenty she was married. One abortion and one living child followed the union. Child died at the age of two years; cause said to be measles. Patient had always been more or less affected with constipation. Some time after marriage an ulceration appeared on both legs, was treated, and healed for a short time, and then reappeared and was again treated with the same result. The patient's rectal trouble began sixteen months before being admitted to the hospital. The procidentia, which was then very manifest, gradually increased in size and gave her great pain. She soon began the use of opium to relieve this pain, and when admitted to the wards it required as much as a grain and a half at each dose to relieve her. From November 14, 1891 (date of admittance), to December 3d of the same year nothing was done for her except to administer opium for the relief of pain, it being thought best to watch the case, especially for an intestinal obstruction, expecting that a colotomy would be required for the same. For numerous reasons, the operation was not thought advisable, and she was ordered on December 3d to go under constitutional treatment; consequently on that date the antisyphilitic medication was begun—viz., the giving of mercury and iodide of potassium. This treatment was pushed to its full effect. In addition to this, the rectal mass was washed twice daily in a solution of 1-to-500 bichloride of mercury. In ten days from the time the treatment was begun the visible portion of this large mass began to disappear, and at this present writing—January 24, 1892—she is taking daily one hundred and fifty grains of the iodide of

potassium, and the mass has reduced to one third of its original size.

"Dr. Mathews saw her to-day and expressed the same opinion as is here stated—that the mass had reduced at least one half since the beginning of the treatment. The patient still suffers a great deal of pain, and it requires as much as sixteen or twenty grains of morphine hypodermically every day to relieve her."

There are several important points in this case to which I wish to call attention: First, that it was a complete prolapse of the rectum, but not in the ordinary acceptation of the term. Not only was a prolapse observed, but by an examination it was revealed that we had a veritable growth to deal with. In making the examination *per vaginam*, the front of the mass could be felt as a great solid tumor, and, as Dr. Miller suggests, protruded through the vulva. On the prolapsed bowel were two or three distinct elevations, due to syphilitic infiltration. From the time of the original prolapse to the time that the case is reported it was impossible to reduce it. It was not only as large as a child's head, but it was as firm as a fibrous tumor. This woman was plainly a syphilitic, and this deposit or infiltration was, without doubt, due to the disease. When the surgical staff met in consultation, every point was carefully weighed in the case and, as a reduction of the growth was impossible, we considered only two propositions: First, to remove the growth in its entirety. Second, to open the colon. Considering the low vitality of the patient and the danger attendant upon doing the operation looking to the removal of the growth, it was thought that a colotomy would possess some advantages; chief among these, that the irritation caused by the passage of fæces would be prevented, and that then, perhaps, the woman could be brought up to a better physical condition and a radical operation performed after this. Of course it was recognized that a colotomy was nothing more than palliative in the case. Certain things presenting prevented the carrying out of this opinion, and it was decided to

place the patient under a strict antisyphilitic medication, hoping for a reabsorption of a portion at least of the infiltrated mass. How well the treatment met the indication can be judged by Dr. Miller's report:

Second. I have already put myself on record in saying that I do not believe that a strictured surface within the rectum from syphilis can be absorbed, and here is an actual demonstration that a syphilitic deposit has been reabsorbed. I wish to draw the point that one is inflammatory in its nature, or rather is an infiltration from syphilis, without the changes which go to make up a stricture; that after a stricture is formed we have a structure which is fibrous in nature and resists all efforts at reabsorption. We are fully aware that the syphilitic deposit in the throat or in many tissues of the body is taken up through the aid of antisyphilitic medication. So, of course, the same thing occurs in this deposit of the rectum, and the case that I report is a beautiful illustration of the same.

There is one unfortunate circumstance connected with this case which is likely to follow all cases of a similar kind. I allude to the fact that the patient has become an opium-eater. As she was already this before she entered the hospital, of course we are not responsible for it, but it is a melancholy condition at best, more especially in this case, as the woman can not take care of herself because of poverty, even if she was relieved of her disease.

Treatment.—Considering the division that we have made of simple and complicated prolapse of the bowel, we must of necessity divide the treatment into two heads: 1. Palliation. 2. Operation.

We have mentioned the fact that simple prolapse of the bowel is a common affection with children, and have tried to explain the reason. In the first place, therefore, the mother or nurse should be instructed that the child should never be allowed to go to stool by itself, but that an attendant should see to one point especially: that after the bowels have been evacuated no straining should be allowed in the

child, which object can be attained by immediately taking it off of the commode. It has been suggested that in children who suffer with prolapse, they should never be allowed to sit down at stool, but should assume the erect or recumbent position during the act, while the nurse carefully guards against the protrusion. If the bowel should come out, it should be bathed in cool or cold water and carefully returned. If the child is constipated, some pleasant laxative should be kept on hand and administered, in order to keep the actions soluble. I have found it to be quite a good idea to move the bowel in these cases by an enema of pure water, carefully watching that no straining effort occurred during defecation. But the physician will be often summoned to a child who has had its bowels prolapsed and the mother has been unable to return the mass. It will be found that the mother or nurse usually places the child across the knees, and by the pressure of the hand or fingers is enabled to push the protrusion back into the bowel. But this effort may sometimes fail, and because of the time that the protrusion has remained out it has become livid and œdematous, and the physician will be sent for to reduce it. In many cases of the kind it will be found a very difficult job to effect this; but the plan should be about this: The mass should be washed first with cold water, then anointed with vaseline, and the finger passed through the orifice into the rectum, and taxis practiced around the finger, during which effort the child should be placed upon its elbows and knees. If it resists such position, it can be held in it by force. Or, as I have suggested, if the child be completely inverted, the mass can be more easily pushed back. It has been advised that, under these circumstances, the index finger be covered with a silk or linen handkerchief, then inserted into the rectum, and by the presence of the material on the finger the mass is more likely to go back with it. If these measures fail, it is the proper thing to administer ether or chloroform, and then in the relaxed condition, which includes that of the sphincter muscle, the growth is easily pushed back. It

should be ascertained whether there is a primary cause in this child for the condition of prolapse, such as worms, phimosis, etc.; and if so, these conditions should receive prompt attention. It will be observed, as a rule, that if the prolapse has been reduced often, it is more liable to come down again and to remain down; therefore, in treating the child, some attention must be paid to this fact. Having given explicit directions concerning the child during the act of defecation, it is necessary to begin a treatment looking not only to palliation, but a cure, if possible, outside of an operative procedure. Therefore, after the bowels have moved and the prolapse has been returned, a piece of soft sponge, absorbent cotton, or some oakum can be fitted over the anus as a compress, and adhesive strips applied transversely across the nates; this to be removed at the approach of the hour that the bowels should move as directed. But I have found that the injection plan with these little patients answers an admirable purpose and often effects a cure. Therefore I am in the habit of advising the nurse to administer an injection of cool or cold water to the patient immediately preceding the act of defecation each day; and just as soon as the act is completed to put on the dressings as suggested. It will be often found necessary to medicate the water with some astringent. One of the best, in my opinion, is fluid hydrastis. In cases like this I frequently use it in a pure state, depositing one or two drachms in the rectum, and holding it in by means of a pad over the anus. As a substitute for this, the muriated tincture of iron, tannin, an infusion of krameria, a decoction of white-oak bark, etc., may be used. I do not like the plan of inserting suppositories. I must, however, deprecate the use of the application of nitric acid or any strong acid to the rectal mucous membrane of a child. Indeed, I have seen such a method followed by serious trouble in the adult.

Case.—A young woman, aged twenty-three, came to me for treatment for prolapsus. I had her take an injection, and by a straining effort cause the protruding of as much of the mass as she could possibly get out. The bowel protruded

for several inches and appeared to occasion the most intense pain. As soon as I inspected the parts I could easily account for this. Located on each side of the mass was a very large, angry-looking, suppurating ulcer, and being at a loss to understand what had produced the condition, I asked her for her previous history. She told me that a number of months prior to this examination she had been examined and treated for this prolapse by the application of pure nitric acid, which was done under the effect of chloroform. Not knowing whether her statement was correct or not, I wrote to the physician who had treated her, and he told me that it was. It can be easily understood, then, that the application of the acid produced the ulceration to which I refer, and yet had accomplished no good in the way of a cure, but had added materially to her distress. I have never yet seen a single case in which I could get my consent to apply any strong acid for the purpose of cure for prolapsus. First, because if it be a simple prolapsus, there are milder and better means that can be used for its cure. Second, that if the peritonæum is included in the folds of the prolapse, there would be great danger of exciting to a general peritonitis, and even if the patient should escape this, the application of such remedies might produce an intractable ulceration or a stricture of the bowel.

Van Buren, in discussing the subject of prolapsus ani, recommends an operation which has been adopted by a number of authorities, and consequently credit is always given him for the same. Therefore I deem it best to give the operation in his own words: "Having etherized the patient, elevated the hips as in Sims's position, reduced the prolapse, and introduced a speculum, proceed to draw a line upon the mucous membrane with the Paquelin thermo-cautery, at a dull-red heat, parallel with the axis of the gut, and repeat this four or five times at equal distances, carrying the cautery each time from a point three inches or more above the anus, slowly down through its orifice, and terminating the line of eschar externally, where the delicate integument covering the sphinc-

ter joins the true skin. You will thus have a series of parallel, vertical stripes of cauterized tissue, the lower extremities of which will appear as rays diverging from the anus. The lines of eschar may be made more numerous, deeper, and broader, according to the volume and duration of prolapse. In a child, or where the protrusion is not voluminous or of very long duration, I would use a delicate cautery, perhaps no thicker than an ordinary probe, but for a larger tumor in an adult a more bulky iron; but in any case it should be bent nearly to a right angle a short distance from the button at its extremity, so that this may reach all points of the concavity of the rectal surface. By operating in this manner, I believe you would get the full effect of the cautery in producing rectal cicatrices with the least amount of danger of subsequent stricture. Where, after cauterization, a cicatrix is left which encircles the whole circumference of the bowel, constriction in some degree must follow. In a very bad case an operation of this kind might be repeated, new lines of eschar being made in the intervals of the old one. This I did in the case of a young girl of thirteen, with defective intelligence, who had an enormous prolapse which had existed from infancy. In this case I added to the linear eschars small scattered points, made with a slender probe-pointed cautery; the effect of the latter, when applied over the sphincter, was remarkable in arousing its contractility."

I have quoted thus extensively from Van Buren that his operation might be fully understood. Of course, he based his conclusions for a radical cure upon the fact that the inflammatory exudate, poured out as the result of the application of a hot iron, could hold the prolapse in place. I tried this plan suggested by Van Buren in a well-defined case that fell under my observation, and, although it was practiced in full accord with his directions, the cure was anything but a radical one. There has been a number of operations proposed for the relief of prolapsus ani. Dupuytren thought that to diminish the diameter of the anus, and also the bowel just within, by removing with strong scissors an elliptical fold of

integument at three equidistant points, the fold including the skin just without, and also a portion of the membrane just within the orifice, could accomplish the cure. Robert, a French surgeon, and Dieffenbach, a German, suggested the cutting out of wedge-shaped masses from the over-dilated orifice, after applying deep sutures, close the wound, and thus diminish the outlet; and Dieffenbach passed stout ligatures beneath portions of the prolapse near its base, and, making traction, cut out with strong curved scissors a portion thus drawn down upon, and even in some cases extirpated the whole mass. Valentine Mott modified Dupuytren's operation by removing several larger elliptical portions entirely from the mucous membrane and drawing together the edges of the resulting wounds by sutures. Neither one of these three operations has stood the test of time, and consequently can not be recommended.

Dr. Charles K. Briddon reported to the New York Surgical Society, October 8, 1890, a case of prolapse of the rectum, operation and recovery, which meets so fully my idea of how the operation should be done that I take pleasure in reproducing his report here:

"Emma H., aged thirty-two, married; no morbid family history. General health had always been good. Her present trouble dated back to an early period of childhood. With every defecation there had been a protrusion of the bowel through the anus, the condition being much aggravated when the bowels were constipated. When riding, traveling, or engaged in any other active exercise, the patient had always had a feeling of insecurity, due to a partial loss of control over the sphincter. She had one miscarriage and one normal labor nine years ago. For a period of two years following the birth of her child she had suffered little inconvenience from the prolapse. Her symptoms had all returned, however, and seven years ago she had undergone the operation of linear cauterization, which was followed by temporary relief. Her symptoms had again returned, and she desired a cure by operation. The perinæum having been shaved and scrubbed

and the parts made aseptic, the prolapsed mass, five inches long, was drawn down through the anus and thoroughly exposed, a procedure easily accomplished, owing to the relaxed condition of the sphincter. The patient was then placed upon the back with her thighs separated and elevated as in the lithotomy posture. An incision was made transversely through the mucous membrane on the anterior aspect of the prolapsed gut, a little below the verge of the anus. The dissection was then continued, the hæmorrhage being checked with clamps. The peritoneal pouch of Douglas was then opened. The danger of infection at this stage of the operation was minimized by frequent irrigation with Thiersch's solution. The peritoneal cavity was then closed off by uniting the two opposed serous surfaces by Lembert sutures of fine catgut above the line of division. The prolapsed portion of the rectum was then ligated *en masse* with an elastic ligature and cut away with a few sweeps of the scalpel, and the approximal end of the gut slipped up within the anus. It was brought down and, after the application of a very large number of ligatures, which were required to control the hæmorrhage, its mucous membrane was sutured with silk to the mucous margin of the anus. The sutures last introduced were left long, the ends hanging from the anus. The site of operation was irrigated, a morphine suppository inserted, and the operation completed by the application of an antiseptic dressing and a T-bandage. The portion of gut removed measured over five inches in length. There was some rise of temperature on the third day, with nausea, eructations of gas, and tympanites. The patient convalesced steadily and regained perfect control over the rectal sphincters."

I am satisfied that if a radical operation is called for in a case of prolapse of the rectum of the kind mentioned, the operation done by Dr. Briddon is the one that should be sanctioned. And yet I am sure that had the patient fallen into less expert hands, a cure could not have been reported. Another thing in favor of a radical operation to-day is that we are living under a new *régime,* and it must be conceded

that no such operation as he did could have been done successfully without the antiseptic precautions that he practiced. In this connection I desire to say that Dr. Frederick Lange, of New York, has reported a new operation for the cure of prolapsus ani, and I therefore embrace what he says.

"The operation about to be described was devised to meet the necessities of the following very aggravated case: For almost twenty years Mr. P. G. had been suffering from prolapsus recti, with more or less incontinence. It seems that an inflammatory disease of the rectum (probably dysentery), accompanied with intense tenesmus, was the original cause. He had been operated upon a number of times after the usual method (cauterization and excision of the mucous membrane), but apparently with only transient and partial relief. After one operation, done by my colleague Dr. Adler, he was improved for several years. Altogether he had undergone five different operations, when, in October last, he was readmitted into the German Hospital. He suffered from incontinence as before. The anal ring was quite relaxed and wide open, and even with a slight pressure the rectum was pressed out. The patient assured me that the prolapse was at times worse than ever before, and from Dr. Adler's statement I concluded that formerly the rectum would protrude to the length of fully six inches. I operated in the following manner: The patient was fixed on the table in the knee-elbow position, a thick cushion placed between his knees and under the lower part of his thorax and the upper part of his abdomen, giving a sufficient support. His legs were tied to the table and his head rested sideways on a pillow. I have lately performed almost all my rectal operations with the patient in this position, and I can not recommend it enough. The hæmorrhage is decidedly diminished, the parts are all more accessible, and the principal vessels can nearly all be secured before they are divided. An incision was carried from the lower part of the sacrum down to the anus, until the posterior wall of the rectum was reached. I then removed the coccyx, for two reasons: First, I wished to narrow the gut up as far

as possible; and, secondly, I thought that the proposed action of the levator ani might thus become less impeded. The lumen of the rectum was narrowed in such a way that buried *étage* sutures of iodoform catgut were introduced, which did not perforate the entire thickness of the gut, the first row being inserted near the middle line, and forming a fold in the posterior wall, which protruded against the rectum. In this way the more lateral portions of the gut, so far as it could be done without causing too much tension, were brought into apposition; then the surfaces of the levator ani and sphincter externus, which had been dissected back, in order to lay bare the posterior walls of the rectum, and next their cut surfaces were united by similar sutures. In order to secure a more lasting union, several buried sutures of silkworm gut were also inserted into the muscular crest. Finally, a few sutures in the integument were introduced, and the cavity corresponding to the removed coccyx was left open and loosely filled with iodoform gauze."

Satchel for rectal instruments.

It will be noticed, of course, that this operation was done also under antiseptic precautions, and we must believe that in recommending operations looking to the radical cure of prolapse of the rectum, they must be done in an antiseptic way, or the danger is doubly increased. I wish also to draw

attention to the fact that in both the operations which I have quoted, cauterization by the Paquelin instrument had been practiced previously.

The methods of treating prolapsus ani in a radical way have not been very successful in the past, and I am therefore pleased to record two such successful cases in the hands of such distinguished surgeons as Drs. Lange and Briddon. Theoretically, I have often been impressed with the idea that the linear cauterization as suggested by Van Buren was a good plan, but after giving it a thorough trial I abandoned it, for the reason that it did not meet the promises which had been held out. This verdict is corroborated by a recital of the two cases just mentioned. Of course, the operation practiced by Dr. Lange could not have been done on Dr. Briddon's case, but I am inclined to believe that it will meet the occasion in quite a number of instances. But for the radical cure of procidentia I am sure that I like Dr. Briddon's plan best. But we must face the fact that cases which require the radical cutting operation at all are very rare. A prolapse of the rectum, which requires some surgical treatment for its radical relief and which includes the mucous membrane only, is of very common occurrence ; and it is more necessary, in a treatise of this kind, to speak of these than of those which require a serious, dangerous, and radical operation.

Therefore, conceding that simple prolapse of the bowel is more frequently met than complete prolapse, and that oftentimes it requires surgical treatment, it is a matter of some concern to know which is the best way to deal with such cases. In a great many of them, especially in children, where the rules that I have laid down are observed, and the local applications, in the form of astringents, are made and the general health looked after, and any cause which may have produced the prolapse removed, such as stone in the bladder, a stricture in the urethra, or an operation for phimosis, these patients will get well without an operation. But where all such have been tried, or there is no existence of diseases which cause prolapse, then it is necessary to think of more

positive means of cure. The method of applying ligatures to sections of the mass, after the same manner as the operation for hæmorrhoids, has been practiced and favorable reports made, but the plan has been more or less decried by some authors. Dr. Beane, of New York city, reported a cure of a large, complete prolapse in a woman of forty-two, by applying the clamp successfully to the tumor at four points, inclosing at each point a fold of mucous membrane an inch and a half long, cutting off half the tissue projecting beyond the clamp and cauterizing the remainder. I am favorably inclined to this method of curing cases of prolapsus ani, which can not be cured by palliative means, and my faith in this method has arisen from the good results that have followed these operations in my hands. Whenever, therefore, I see a case of simple prolapse of the bowel, and am satisfied that no peritonæum is included, my rule is to do as follows: I have the patient's bowels freely moved the evening before and on the morning of the operation; I have an enema of hot water given. I then direct that, during the passage of the water, the patient is to strain violently, which will bring down the prolapse, and in this condition he is to lie upon the table. In the majority of these cases the operation can be done without an anæsthetic, and I prefer to do so for the reason that the sphincter muscle will aid me very materially in restraining the prolapse and preventing it passing back into the bowel, where, under an anæsthetic, the bowel slips back with easy effort. Having shaved the parts and washed them thoroughly with the bichloride solution (1 to 3000), with my pile-clamp I catch up a section of the gut, transfix it with a needle, and tie tightly on each side. I then cut off the mucous membrane close to the ligature. This is repeated several times, going round the circumference of the gut if necessary. I then dust the exposed parts freely with iodoform, and gently push it back into the rectum; then placing a pad over the anus and applying a T-bandage, the operation is complete. I do not allow the bowels to move for three days, when an aperient is given and an enema, after which very little treatment is necessary.

Several years ago I reported to the Kentucky State Medical Society an operation for prolapse in a gentleman fifty-five years old, after this manner, including at five different points as much as two inches of the mucous membrane, cutting off most of the tissue above the ligature, dressing antiseptically, and finishing in the manner I have described. The operation was successful, and no return has ever been noticed.

If I were restricted to one local application for a simple prolapse of the rectum I would take carbolic acid, although I have said that the use of any strong acid is to be deprecated in these cases. I have no doubt that many cases of stricture of the gut have resulted from the application of fuming nitric acid. At a meeting of the Therapeutical Society (*Gaz. Hebdomadaire*) Dr. Ferraud related the case of a lady, thirty-five years of age, who during three years had suffered from rectal and hæmorrhoidal prolapsus to the extent that she could not walk around her room without a tumor almost as large as a fist descending, inducing most acute suffering. The tumor could be reduced while lying in bed by means of a prolonged and very painful taxis, which had to be repeated after every stool. Having tried all the usual remedies in vain, Dr. Ferraud gave a subcutaneous injection of ergotin, depositing one gramme (twenty centigrammes) of a solution composed of glycerin and water, of each fifteen parts, and alkaline hydrated extract of ergot, two parts, in the ischio-rectal fossa, beside the hæmorrhoidal projection. Considerable amelioration resulted, and three other injections were given at intervals of twenty days, ten days, and a month, with the result of effecting a cure. The patient was seen six months afterward, and it was found that the prolapse was not reproduced in walking, going up many flights of stairs, etc.

It appeared to me, when reading this report, that the natural thing to do would have been to operate on this woman for hæmorrhoids by the ligature, and she would have been promptly cured of prolapsed hæmorrhoids and prolapsus recti. Granting that the ergotin injection would remedy the

prolapsus, what could be the necessity for drawing a lot of hæmorrhoidal tumors above the sphincters and keeping them there? To have *cured* them, as well as the prolapsus, would have been pleasant to the patient to say the least of it. Whenever large hæmorrhoids exist and protrude from the rectum, prolapsus of the gut naturally follows. If an operation is done for piles, the prolapse will disappear. The attention of the profession was first called to the treatment of prolapsus ani by the subcutaneous injection of ergotin in a paper read before the French Academy of Medicine by M. Emile Vidal, in which he reported three cases successfully treated by this method. The first was a man aged thirty-nine; the length of time prolapse existed, eight years. Total number of injections, twenty-two. Four years and no return. The second patient, female, aged sixty-four, cured after twenty-four days' treatment, and the third patient was cured by six injections. The solution used was Bonjean's ergotin, fifteen grains, and cherry-laurel water seventy-five minims. Two days were usually allowed to intervene between injections; the needle inserted at a distance of one fifth of an inch from anal orifice. Acute pain always followed, accompanied by contraction of the sphincter, which lasted several hours. Spasm of the neck of the bladder and retention of the urine frequently followed. In no case, the report says, was local inflammation or abscess caused by the ergotin. The amount injected was usually ten or twelve drops of the preparation named.

My experience with this remedy has been so very unlike that recorded here that I beg to give it. Acting upon the suggestion of Vidal, I tried the injecting plan of ergot in two cases of prolapsus ani. The following is a brief history: Mrs. A. D., aged fifty-two, had prolapsus for seven years. Invariably comes down at stool during the act of defecation. Her general health was much below par. No special diathesis. Complains of pain in the back extending down the legs. Has a mucous discharge from the rectum, occasionally tinged with blood. It is so great at times as to be called by her a dysentery, and has been so prescribed for by several physi-

cians. In her case I made sixteen injections with the preparation suggested, using glycerin instead of cherry-laurel water. Allowed two or three days to intervene between injections. Was injected each time at my office, walked home, and never ceased her household duties. The result was as follows: After the third injection she expressed herself as greatly relieved of the pain in back and legs; also states that the tumor is not so large. After the tenth injection the size of the tumor had perceptibly diminished. Up to the fifteenth injection she had not complained of any pain at the time of injecting, or thereafter. No contraction of the sphincter or spasm of the bladder. After injecting the sixteenth time I missed her from my office for several days, when I was summoned to her residence, and found her suffering with a large rectal abscess. This was freely opened and several ounces of pus escaped. It got well rapidly and left no fistula. The patient appeared at my office six weeks afterward, saying that she had never had any return of the prolapsus since the last injection. Two weeks afterward, making eight weeks since treatment, she again came back and informed me that upon going to stool that morning the bowel descended as much as formerly.

The second patient was a young man in robust health. Only eight injections were given when local inflammatory action was excited. I feared the result, as experienced in the first case, and discontinued the ergotin treatment. Whether the abscess was caused in the first patient by allowing her to pursue her daily avocations is a question. Be that as it may, it appeared at or near the point of injection. That ergotin could produce inflammatory action it is reasonable to suppose, and if an abscess occurs even occasionally, and not as a rule, the treatment could not be recommended. The method is slow in detail, and, as Vidal says, accompanied by much pain and distress. That the result of such treatment is satisfactory can not be borne out in fact. Therefore, for the above reason, and the experience that I have had with the agent, I certainly can not recommend the method. I would call at-

tention especially to three points in the report of my cases: 1. The complete absence of acute pain. 2. No contraction of sphincter muscle or spasm of the bladder. 3. Abscess and local inflammation *did* ensue.

I ascribe the absence of pain during the injections or following them to the fact that the point of the needle was inserted farther out toward the ischio-rectal fossa than was done by Vidal, thereby escaping the muscular fibers of the sphincter. To this reason also was the freedom from a contracted sphincter, spasm of bladder, etc., accredited. For what reason my patients and not those of Vidal suffered local inflammatory action, and in one instance ending in abscess, I can not account.

This plan of treating prolapsus ani by ergotin, although advised for a time with much vigor, has fallen into disrepute, and to-day there are a very few that give it mention at all. There are other plans that meet the indication better, and should be adopted. Fortunately, the disease is rare so far as the complete variety is concerned, and the simple variety is mostly confined to children, and will get well under special directions without an operation.

Dr. W. Joseph Hearne, of Philadelphia, reports in a private communication an operation for intractable prolapse which he believes is unique in this country. The patient, a lady, aged about twenty-four, presented an inch annular protrusion with usual symptoms. On etherization, however, it was seen that some four inches of the rectum extruded after divulsion. Amputation, which had been designed, was clearly unsafe. A cœliotomy was made, the colon drawn up until the prolapse was reduced, and ventro-fixation of the movable bowel made by the Mathews suture. A complete cure resulted, and after a year the woman remains well.

CHAPTER XXI.

PRURITUS ANI.

Of all diseases of the rectum or anus, pruritus ani is the most intractable one. If a patient presents having a well-defined case of internal or external piles, a polypus, a fissure, an irritable ulcer, or a fistula in ano, we can safely say to him: "If you will submit to treatment, we can promise you that in a very short time you will be entirely relieved." It is not so with patients suffering with pruritus ani. It taxes all the energy and thought of the physician to fight successfully this trouble. The patients do not complain of any pain, but will frequently say to you that they would rather have a painful disease; indeed, they will submit without hesitation to any pain that you can inflict upon them that looks to their relief at all. I have had a number of such patients to say to me that pain was really a relief to them. For instance, in making an application of iodine, carbolic acid, and other substances which excite pain, they would not complain at all.

Ætiology.—As regards the ætiology of this disease there has been much discussion. Some contend that it is a local disease, others that it is a constitutional one. Some say that it is due to the reflexes; many ascribe it to the habits of the patient; others believe it is strictly neurotic. I am sure that all of these causes more or less play a part in the production and continuation of the disease. If it be a constitutional affection, it is aggravated and kept up by the eternal effort of the patient to scratch himself. If it be a local disease, like all other inflammations, it is aggravated by any-

thing that disturbs the general constitution. Now, I know that some authors writing on this subject classify pruritus ani as a symptom only of some other disease. I am sure that this is a mistake. Kelsey says: "Pruritus ani is generally a symptom of some other disease, such as hæmorrhoids or eczema, but it is often present in a marked degree when no cause for its existence can be discovered." There can be no doubt that this statement can be borne out by facts in so far as the quotation indicates that pruritus ani exists as a symptom *along with* hæmorrhoids or eczema, if pruritus can be called a symptom, and not a disease *per se*. But in searching for the true ætiology of the disease, we are at once set back in our opinion by the latter clause of the quotation, "but it is often present in a marked degree when no cause for its existence can be discovered." Now, if we are just simply to deal with itching at the anus as a symptom, it should receive no consideration as a disease in fact, but instead, when treating of such subjects as hæmorrhoids, eczema, etc., we should say that when these diseases are cured the symptom or symptoms will disappear. Some authors go so far as to say that although pruritus ani may exist to a marked degree when associated with hæmorrhoids or other rectal disease, just so soon as the hæmorrhoids are operated upon and are cured this symptom will disappear. This has not been my experience at all, but, on the contrary, in every single instance where pruritus existed to any degree, coincident with the hæmorrhoidal disease, it was found in just as bad form after the patient was cured of hæmorrhoids as it was before the operation. When we consider the changes that take place in pruritus, it can be easily understood that this would be so. The skin becomes thickened and parchment-like; is thrown into heavy and nearly indurated folds; a pathological condition not only exists in the nerves supplying the integument, but in the integument itself. From the act of scratching there is a great loss of the natural pigment over the parts affected. The skin changes color and becomes of a dull, whitish appearance instead of

the natural one. There may be an exudation from this whole surface, consequently a moisture, or it may be of a dry parchment character; therefore I can not believe with Kelsey that "pruritus is often a symptom of internal hæmorrhoids, and is easily and effectually cured by their removal." Again, it is often a symptom or complication of a fistula with a small external opening, such as may be overlooked in a cursory examination, and is cured by the ordinary operation and the consequent cessation of the discharge upon which it depends." Suppose we have the changed condition of the skin of which I have spoken in a case where there is no discharge of any kind from hæmorrhoids, fistula, or any other diseased condition. Why is it then so intractable and hard to cure? Now, if a discharge has been the cause of this condition, you may stop the discharge, but the condition remains. I would ask, Are the two conditions the same? If it is true that the pruritus will disappear so soon as the hæmorrhoid is cured, then it was in fact only a symptom; but if we find the same thing existing with the pathological changes in the cuticle that I have mentioned, then it is a disease in fact, and must require special consideration and treatment. It is either a disease or simply a symptom of disease. Which is it? Among the diseases mentioned that may produce these *symptoms* are disorder of the digestive system; constipation; disorder of the liver; intestinal worms; disease of the kidneys; disease of the uterus or ovaries; stricture of the urethra; stone in the bladder; hæmorrhoids; fistula; cold; mental diseases; habit, such as drinking, smoking, etc. It reminds one very much of the reply that the old country doctor gave the consultant when he was asked what he gave a prescription for which contained so many ingredients. He replied: "If one remedy doesn't hit the disease, perhaps another will." In applying it here we might say that if pruritus was not caused by one of these many different diseases, perhaps it was caused by the other. I believe that an explanation of this trouble can be found in the distribution of nerves to the lower part of the rectum.

The inferior hæmorrhoidal nerves, which give the principal nerve supply to the integument around the anus, also send branches to the lower inch of the mucous membrane of the rectum. In cases of pruritus ani the greatest itching is observed to be just within the anus, as this nerve supply would seem to indicate. Now, I believe that pruritus ani is a disease of local origin, implicating the terminal nerves, and that it is kept up by many things, especially by the reflexes; therefore, if there be a diseased condition of the bladder or genital organs, excessive sexual indulgence, great mental exertion or excitement, stomach troubles, malarial poison, use of tobacco or stimulants, the disease will be aggravated through the general system or by direct reflexes. As to local causes we can mention parasites—as "pediculi" and "thread-worms," the use of hard or printed substances for detergent purposes, or the production of an abrasion from any cause, as a marginal sinus, a small fissure and eczema can be so classed. These produce not only an irritation but an excoriation, and the nerves distributed here are at once affected. I have seen many cases of severe pruritus of the anal region in men and women who were otherwise perfectly healthy. In looking over my record book I am satisfied that the majority of my cases suffering from this disease did not have other rectal disease, and I am equally sure that the majority of cases that I have treated and operated on for internal hæmorrhoids had no pruritus ani. So well persuaded am I of this fact that if I had never read anything concerning the symptoms of hæmorrhoidal disease I would not class pruritus as a symptom at all.

Fothergill says: "Pruritus ani, with or without eczema, is sadly common in liver indigestion, and is an outcome of blood poisoning by the products of indigestion." That liver indigestion may produce an itching at the anus I have no doubt. That it causes a well-authentic case of pruritus, involving the pathological changes in structure which we have noticed, I do not believe.

We have stated that we believe pruritus to be a local dis-

ease and must be so treated. In other words, I do not believe that, after pruritus ani is established, treating the organ which caused the affection will cure the pruritus, whether it be kidney disease, liver disease, or what not. I do not wish to be understood as saying that the terminal nerves around the anus and rectum can take on disease without a cause, for there may be many local conditions which would produce the disease. For instance, if the portal circulation is interfered with, and the blood is held in the hæmorrhoidal veins, a congestion results which, after a while, ends in a varicose condition of the blood-vessels, and eventually a good-sized hæmorrhoid results. Now, this congestion and interference with the blood-supply of the rectum, of course, also interferes with its nerve function, but it has been a local change. If the epidermis is scratched off at the verge of the anus, the filament of a nerve is exposed, and the excitation of it produced by scratching keeps up the itching. The same can be said of the excitability here of the terminal nerves by the presence of thread-worms or the existence of a small fissure or a marginal sinus. After the condition is established, and we not only have itching but the disease, then I am fully persuaded that anything which affects the general nerve system will be reflected here. I am satisfied that I I have seen cases of pruritus ani aggravated by drinking coffee or whisky. I can recall one or two instances where the smoking of several strong cigars would cause the itching. The worry that business and professional men are sometimes subjected to will increase the symptom, but I do not believe that either one or all of these can originate a case of pruritus ani.

Symptoms.—I hardly think that a true case of eczema, either acute or chronic, should be designated pruritus. Although eczema will cause the itching sensation referred to, yet, if seen in its incipiency, it is more easily cured than a case of pruritus *per se*. Pruritus is not attended by pain unless some fissure or abrasion is encroaching upon the external sphincter muscle. There is really but one symptom of the disease,

and that is itching—that terrible, everlasting, maddening, distressing itching. There is sometimes an exacerbation of a few hours, and often these patients are not troubled much through the day, but at night, after they retire and get warm in bed, the horror begins. I have had more than one patient tell me, suffering from this disease, that if it were not for their family they would commit suicide, and one patient, to my knowledge, went crazy with the affection. Therefore, although looked upon often by physicians as a trivial affair, it is a very serious one and deserves our honest attention. The more the local parts are irritated by scratching, the worse the condition is, and yet they can get a surcease from their trouble, for a few moments at least, by the effort of scratching. These patients frequently get in the habit of taking opium to produce sleep, and yet it is a well-known fact that opium increases the trouble. We implore these patients not to scratch themselves, and yet it would do just as well to ask the man dying of thirst not to take a cool drink of water if it were within his reach.

Treatment.—I believe that the treatment should be applied principally to the local condition, and yet, unless the patient gives his consent to allow you to observe him for as long time as necessary, it is of no use to begin. Of course we do not see these patients until the disease is established, and, as I have already said, believing that habit, etc., has much to do in keeping up the affection, it is proper to say to the patient before you begin treatment that he must leave off such things as alcohol or malt liquors, the use of tobacco in any form, excessive venery, mental worry, if he can, rich and spiced food, and live altogether a temperate life. In giving these instructions once to a patient, he admitted that he was in the habit of getting on periodical sprees. I said, of course, that he must stop them or I could not cure him. I had him under observation for a number of months, and at last he quit coming to the office, but appeared again after awhile. During this interim his wife came to me and informed me that her hus-

band had been on a big drunk, and plead with me, for the sake of her and his children, that I would do something to frighten him into stopping drink. I told her that I would think over the matter, and if I could do anything looking to that end I certainly should ; but I confessed that I was at my wits' end. When he again came to the office he remarked that he had simply dropped in to tell me that he was entirely cured. So I was confused as to the manner in which I should approach him to make an impression on him in the matter of drink, but asking him to lie upon the table, which he consented to do after protesting, I uttered a hurried exclamation, and he turned his head quickly and said: "What is the matter?" I answered: "You've been drunk." He asked who told me so. I replied that it was not necessary to be informed of the fact, as I saw plain evidences that his disease was coming rapidly back again, and that it would ruin him for life if he did not quit the habit. He evidently believed me, for he swore that he would never take another drink. Whether my deception played its part I have never heard.

The patient suffering from pruritus ani presents himself asking for some remedy that will relieve the terrible itching to which he is subjected, especially at night. As we have already stated, this terrible itching usually begins just after the patient has ensconced himself in bed ; therefore, outside of any treatment except palliative, we should direct the patient as follows: Before retiring, the parts should be bathed in as hot water as can be endured. Then, after carefully drying, he should be instructed to apply the following:

℞ Campho-phenique..... ʒj ;
Glycerin..... ʒj. M.

With this he is to bathe the parts freely and often if necessary. A very good prescription under these circumstances is the following:

℞ Chloral hydrat..... ʒj ;
Gum camphor..... ʒss. ;
Aquæ des.,
Glycerin..... āā ʒj. M.

This preparation to be applied as frequently as desired. It may be found, in addition to any local application, that it will be necessary to give some hypnotic to produce sleep. In this event it is best to avoid the administration of any opiate, and, as a substitute, I have found the following to be of service :

℞ Sulphonal..... gr. xl.

Make four capsules.

Sig. : Take one and repeat every hour if necessary.

Allingham recommends a chloroform ointment made by rubbing together one drachm of chloroform and an ounce of lard or cosmoline, and repeat the application during the night if necessary. It will be found for the purpose of producing sleep that the remedies will be often changed and must be considered as only palliative. The treatment directed to a cure must be entirely different from this. As has been indicated, a pathological condition exists, a change in the natural structure of the part, and therefore prompt attention must be given to this condition. It will be observed in the treatment of these cases that an unnatural condition of the skin exists ; in other words, a scarf skin, which must be destroyed. Any remedy that is applied that accomplishes anything less than the destruction of this new formation will be found to be of no permanent benefit ; therefore we should look to something more permanent in the treatment. There are several agents which will effect the destruction of this scarf skin. Among these may be found tincture of iodine, pure carbolic acid, camphophenique, etc. It is utterly useless to prescribe remedies that are antipruritic without first destroying this new formation of skin. Therefore I would suggest that in a patient where the condition that I have described exists, the whole surface should be coated with the pure tincture of iodine, said application to be used every two or three days until the object has been accomplished, or it may be, for reasons which the case will indicate, that the carbolic acid is to be preferred. In this instance I wrap a probe with surgeon's cotton and dip it in pure acid, separate the folds around the anus and apply

freely between each and all of them, then over the entire surface. This can be repeated on the third or fourth day. The campho-phenique is an admirable substitute for either one of the other remedies, applied in the same manner. It will be noticed, after a sufficient number of applications of either one of the remedies, that the cuticle will begin to peel off and leave a new base. Some inflammation will be excited, but this, of course, should not be noticed. After its entire and thorough destruction, other remedies can be used of a milder type. Of course these are innumerable, but I have learned to rely upon a comparative few. Among those that I like best will be found the following:

℞ Bichlor. hydrar..... gr. iv;
Vaseline..... ℥j.
M. Sig.: Apply.

Or what is more suitable to the majority of cases is:

℞ Hyd. chl. mit..... ʒij;
Vaseline..... ℥j.
M. Sig.: Apply.

Or,

℞ Oxide zinc oint..... ℥j;
Balsam Peru..... ʒj.
M. Sig.: Apply.

The following is a favorite with Allingham:

℞ Liquoris carbonis detergens
(Wright's),
Glycerinæ.....āā ℥j;
Pulv. zinci oxidi,
Calamin. prep.....āā ℥ss.;
Pulv. sulph. precip..... ʒss.;
Aquæ puræ.....ad ℥vj. M.

A favorite prescription of mine is:

℞ Menthol..... ʒj;
Mur. cocaine..... gr. xx;
Alcohol,
Aquæ dest.....āā ℥j. M.
This is to be applied by means of cloth.

Dr. Bulkley recommends the following:

℞ Ungt. picis..... ʒiij;
Ungt. bellad..... ʒij;
Tinct. aconit. rad..... ʒss.;
Zinc oxidi..... ʒj;
Ungt. aquæ rosæ..... ʒiij. M.

An ointment of chloral and camphor, a drachm of each to the ounce, is said to be very effectual in allaying itching. But every case of pruritus ani must be considered an individual one and the remedies applied accordingly. If this changed condition in the nerve distribution has been brought about by constipation, then constipation must be relieved in the manner as suggested in the chapter devoted to it. Under such a condition of affairs nothing will be found to act so admirably as injections of cool or cold water; but the other rules, as laid down for treatment of constipation, must be observed.

If there exist such symptoms as indicate hepatic disturbance, purgation is not necessary; but some remedy or remedies should be given looking to the increase of the natural secretions. I have found the following plan to be of service in such cases: Direct the patient to buy a dozen fresh lemons and each night to squeeze the entire juice from one lemon into a glass, then fill the glass with water and drink it, without the addition of any sugar. This to be repeated until the twelve are taken. Or, in the drinking habit, it will be found necessary to administer some remedy for its cholagogue effect. There is none better than calomel, taken in broken doses. As a substitute for this, however, under certain conditions, I am in the habit of prescribing, viz.:

℞ Bichlor. hydrar..... gr. j;
Tinct. cinchona..... ʒiv.

M. Sig.: Take a teaspoonful three times a day.

This preparation will be seen to have a mild and yet a decided effect upon the secretion of the liver.

If thread-worms are observed to be the cause of this trouble, of course remedies should be adopted which will

eradicate them. I have found that injections of cod-liver oil usually accomplish this purpose. If it is necessary to medicate the oil, it can be done with lime water, carbolic acid, or campho-phenique, one drachm to eight ounces of the oil. Other remedies used are tincture of iron, turpentine, chloral, etc., made in proper solution. Van Buren said in his work that in the beginning of his practice he was in the habit of using sulphurous acid as a last resort in pruritus ani, where he suspected a vegetable instead of an animal parasite, and that his experience taught him to use this acid first instead of last. It can be diluted with water, equal parts, but I am in the habit of applying it pure in cases where I suspect the trouble to be parasitic. I have also found that an application of pure carbolic acid destroys this vegetable parasite. If this disease of pruritus ani has for its origin a small fistulous sinus, it must be sought out and divided. If any piles, polypus, fissures, etc., exist, they should be operated on. In women it should be noticed whether there is any disturbance of the womb or the vagina, as will be indicated by the discharges. If so, all these should be attended to. But more especially should the reflexes be traced. The man should be questioned about his habits, and if there is a suspicion of stricture of the urethra he should be referred to the proper specialist. If it is believed that the woman has ovarian tube or womb trouble, she should be referred to the gynæcologist. Sometimes it will be a difficult thing to trace out the proper reflex in these cases, but it is worth our attention to try to do so. At the same time it must be remembered that we have had established here a disease within itself, and nothing less than a persistent course of treatment will effect a cure. It may be that habit has something to do in keeping up the trouble, therefore the use of alcohol or malt liquors, tobacco, coffee, tea, stimulating food, late hours, excessive eating—all should be interdicted. It is well, in beginning a course of treatment of these patients, to have the intestinal tract entirely cleared. Hence it is very well to suggest to these people the taking often of some of the mineral

waters, say Saratoga, Carlsbad, French Lick, or any other good aperient water that will accomplish the purpose. The patient should be especially instructed not to sleep on a feather bed, but on a mattress. The cover should never be excessive and the room not overheated. Constitutional remedies are frequently advised for this class of patients, such as cod-liver oil, quinine, strychnine, arsenic, and salicylate of soda; also pilocarpine and jaborandi are said to be beneficial in some cases. I have tried many drugs looking to their constitutional effect, and, in the majority of cases, must say that I have obtained no good whatever from them. I believe that the practice of frequent bathing—not only the hot-water bath but the Russian bath—is of service in these cases. To accomplish the entire destruction of the pathological structure around the anus in pruritus ani, it is proposed by the French that it be reduced to a surgical operation in lieu of removing it by medicine. Therefore the plan has been adopted of placing the patient under the effect of an anæsthetic and scraping the entire scarf skin away. This looks to me to be extremely plausible. For, indeed, all of our efforts at a cure of this formidable disease can only succeed after this skin is destroyed. Its destruction by medicine is a slow process, and I believe if this suggestion is followed, to scrape it away by means of a scoop while the patient is under the effect of ether, that if this alone does not accomplish a cure, the medicine applied afterward will be more sure to take effect. I should mention, before closing the chapter, that some authors have praised very highly the use of electricity in this trouble. I can not believe that electricity is anything but palliative, but it is said by some to have a curative effect. It may be used either in the form of the galvanic or faradic current, applying it to the surface as strong as the patient can bear, the feeling of the patient being the guide. In my experience, the galvanic current has proved of more service than the faradic, but others have reported the reverse. I can, however, only recommend it as a palliative measure. Allingham recommends — when the irritation of pruritus

is so great that the patient is quite worn out for want of rest—the introduction into the anus at bed-time of a bone plug, shaped like the nipple of an infant's feeding-bottle, with a circular shield to prevent its slipping into the bowel. The nipple should be about an inch and a half in length and as thick as the end of the forefinger. He says that it is most efficient in preventing the nocturnal itching, and that a good night's rest is almost sure to result from its use. In explanation of this he says: "I presume that it benefits by exercising pressure upon the venous plexuses and filaments of nerves close to the anus."

This corresponds to my idea of the pathology of the disease. But, after trying every known remedy and measure, the physician may be baffled in his efforts to cure this peculiar affection. The patients that are with him to-day will drift to another to-morrow, and he need not be surprised to hear of them in the hands of quacks before they get through. It is a singular fact, and yet a true one, that after trying many remedies the physician or patient will stumble upon a very simple one which will give relief. I remember once to have treated a robust and healthy Irishman for an intolerable itching of the anus for a number of months, after which time he disappeared, and I did not see him again for a year, when he told me that my remedies had done him no good, and some old woman had advised him to purchase five cents' worth of calomel and rub it up with just as much lard as would hold it conveniently, and apply it. He attributed his whole cure to this prescription, and gave me no credit for what I had done. Divulsion of the sphincter muscle is sometimes of great service in treating cases of pruritis ani, and I would advise that this procedure be resorted to in every case that has resisted the ordinary remedies.

CHAPTER XXII.

IMPACTED FÆCES.

The common impression is, I am sure, that when the term "impacted fæces" is used, the location is set down as being in the rectum. Allingham says: "The result of an attack of constipation may be a collection of clayey fæces, formed in the cæcum or in any part of the colon; but the term impaction is generally used when the accumulation takes place in the pouch of the rectum, immediately above the internal sphincter muscle. This is its most frequent situation, and here a very large deposit, more or less globular in shape, is often found."

Now, we have tried to demonstrate in this work, in dealing with the anatomy of the intestines and the subject of constipation, that the rectum proper was never intended to be a natural receptacle of the fæces, and a study of the subject reveals the fact that the deposit there is only temporary. Therefore I think that it is frequently overlooked that the seat of impaction is the sigmoid flexure and not the rectum. I do not wish to be understood as saying that an impaction of fæces is not often found in the pouch of the rectum; but I do mean to say that if it is not found there, our search should extend higher up into the colon. There are therefore three distinct places where we should look for impaction of fæces—viz., the cæcum, sigmoid flexure, and rectum. As the accumulation of fæces, or any other obstruction of the cæcum, is out of the scope of this treatise, we will not refer to it; and, as in another chapter we have spoken of impaction of fæces in the sigmoid flexure, we will confine our remarks here to the accumulation of the same in the rectum proper.

I have met with this condition in persons of middle life, in the aged, and in the young. Indeed, in this modern day, when a rush is made after an education and all the rules of health thrust aside, it is natural to suppose that we would find school children, especially girls, suffering from obstinate constipation, which is the precursor of impaction. It occurs in my practice repeatedly to be called to young girls who have never been instructed in the ordinary health rules, and who scarcely know that they possess a rectum, and certainly are not aware of the fact that their bowels should move at stated intervals; and, as a consequence, suffer from an impaction of fæces. Allingham says: "The cause of the accumulation I believe nearly always to be primarily a loss of power over the muscular coat of the rectum." Now, I do not believe that this is the prime cause, except in a certain class of patients. In the aged, where the muscular coat has lost its tone, I believe this may be true, or in the pregnant woman, where the child's head during a long protracted labor has pressed upon the bowel, such a condition may exist. But ordinarily, and in the majority of cases, I believe that this rule is reversed; that the impaction causes the loss of tonicity in the muscular coats, and, as a result, we have the impaction of fæces. The sphincter muscle plays a wonderful part as an adjunct in this trouble. Whenever it becomes irritable the constant spasm of its muscular fibers prevents the normal evacuation of the bowels, and consequently many efforts may be made to evacuate it, but to no avail. Therefore, in cases of impacted fæces it will be found that this spasm of the sphincter exists, not as the cause of the impaction, but as a result of it. I have known these cases to be treated for every known rectal affection before a positive diagnosis was made, and yet if it is a real case of impaction of fæces in the rectum, the simple introduction of the finger will clear up all doubt. I will only give one case as pertinent to the truth of this statement.

Case.—A physician telephoned me to meet him at a business man's residence on a certain morning. I complied with

his request, when he told me that the patient was suffering from some form of piles, and wished me to examine him. In going into the patient's room, I was informed that he had been in bed for a week. That he had a desire to go to stool often, and that after evacuating his bowels he did not feel relieved; that he had considerable straining at stool, with some discharge of blood, and that his actions were liquid. Examining his parts externally, I could find nothing pathological except a fullness of the veins at the outlet of the rectum. Anointing my finger and introducing it, I at once detected a large, oval mass that appeared very solid, and could be only slightly indented with the finger. In sweeping my finger around it, I detected that it was an impaction of fæces which had evidently existed for a long time. Upon questioning the patient, I found that he did not remember when he had had a well-molded action, and yet he was under the impression that he was then suffering at that time from a diarrhœa. I advised that the patient be put under the influence of chloroform, which was done, when I divulsed the sphincter muscles freely, and by the aid of a scoop removed or delivered this entire mass.

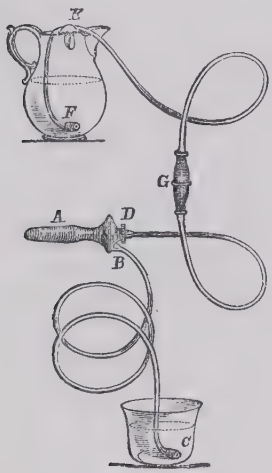
Scoop for the removal of fæces.

It will be seen from this case that the symptoms of impaction are sometimes very obscure. Indeed, it may be confounded, as I have intimated, with any other rectal affection. If it is allowed to go on for any length of time the patient becomes melancholy, a bad color is taken on, and flesh is lost rapidly. An irritability of temper, nervousness, etc., supervenes, and it is no wonder that these patients are thought to be suffering from a malignant disease. It is a most wonderful cause for the reflexes; hence these patients will be found complaining of pain in the back, in the abdomen, down the thighs, difficulty in micturition, etc. When their symptoms are described to the physician, and he ascertains the fact that no solid ma-

terial has been passed for some time, he naturally infers that the patient suffers from stricture, or, if some of the mass has been passed in a solid way, it may be in the form of little bits or of a tape-like character, and these are symptoms which confirm the physician in his opinion of stricture. It must be remembered that such actions are usually the result of, and controlled by, an irritable sphincter muscle. Where an impaction has existed for a great while the patient has morning vomiting, a loathing of all food, a painful thirst, night-sweats, a peculiar barking cough, and, consequently, it is often supposed that he is going into a decline, perhaps from phthisis. I have tried often to detect these tumors by palpating over the abdomen, but I must confess that it is a difficult thing to do, whether the impaction exists in the cæcum, transverse colon, or the sigmoid flexure. It has been suggested that in cases of impacted fæces the anus is nipple-shaped, and the sphincter muscle is tightly contracted and almost as hard as a piece of wood. The size of this mass in the pouch of the rectum may vary from that of a lemon to that of the fœtal head. It is movable, and therefore allows of a liquid action passing around it. I think the diagnosis is made clear in such a case by the introduction of the finger, for it can only be confused with a tumor, and the proper manipulation will show that it is movable and has no attachments; this, together with the peculiar doughy feel, will make out the diagnosis.

Treatment.—The first thing to be done under these circumstances is to break up the fæcal mass. This can not be done without the aid of an anæsthetic. There is no preparatory treatment necessary except to have the patient do without the preceding meal. Having him well under the influence of the anæsthetic, we should forcibly divulse the muscle. It will be found that half-way measures here will not do. The spasm of the muscle must be overcome, and that can only be accomplished by a thorough dilatation. But to those who have never removed a fæcal mass it will be found a difficult thing to do so. It will not by any means fall out of the rectum

when the sphincter is dilated. We will be compelled to bring to our aid some instrument besides our finger. In doing this operation once in the country when I was without my regular scoop, I called for and used a medium-sized iron spoon, and I was persuaded that it was one of the very best instruments that could be used for the purpose. Some substitute a lithotomy scoop, but anything of the kind that meets the approbation of the surgeon can be used. Some care must be taken not to injure the bowel in our effort to scrape out the mass. After we are satisfied that it has all been removed, an irrigation of hot water should be used freely to the surface of the bowel. In removing the mass from women, it is suggested that by introducing two fingers of the left hand into the vagina, and by pressing backward, we can fix the mass against the sacrum, so that it can not slip up the bowel. An after-treatment of these patients is absolutely necessary; for it makes very little difference whether the atony of the muscular coat is primary or secondary, an effort must be made to restore its tonicity. For a few days, therefore, I advise injections of hot water into the bowel. Then I have them discontinued, substituting tepid water, gradually increased to a cold temperature. It is sometimes necessary to medicate this water with a proper astringent. The tincture of iron will be found serviceable. Tannin in solution with glycerin is also good. I have found in the *fluid hydrastis*, one drachm to the ounce of water, an admirable injection in these cases. All the instructions that have been given for the treatment of constipation should be enjoined here, for the reason that constipation has been the prime cause of the trouble. Numerous remedies have been suggested for internal purposes, but I can think of none better



A rectal irrigator.

than a daily administration of the minimum dose of strychnine, combined with aloin, belladonna, or cascara sagrada. The pharmacists put up an admirable pill of this kind. Faradization is admirable in some cases. Of course the sedentary habit should be overcome, and it should never be forgotten that walking is the best of all exercise. It was said by some old writer that he believed that walking would overcome all the ills that flesh was heir to. I can not quite agree to this opinion, but I am sure that this mode of exercise will be found more serviceable in the majority of cases than any other known to the human race. Therefore advise your patient to walk or to ride, get into the open air, and avoid close confinement and sedentary habits of every kind. His diet, too, should be looked after. People sometimes think that they should be allowed to eat everything, and as much as the appetite calls for. There never was a greater mistake made. Certain articles of diet should be interdicted, such as the sweets, which include pastry, candies, etc. Others should be commanded, such as nutritious food, but overeating should be positively forbidden.

I can not finish this chapter without saying that the hygiene of the lower bowel has never received the proper attention. It must be admitted that the subject of constipation is a very important one, and that when such a habit is established, it is a most difficult thing to manage. Patients come to us complaining of many symptoms which are really trivial in their nature, and yet they are treated by much medication; but this subject, which is of rare importance, is neglected. Children are not responsible for the non-observance of the rules of health, but it must be remembered that many of their affections can be traced to the want of the proper observance of the regular daily habit of evacuating the bowel. Such a condition not only does harm in a local way, but is accountable often for a general diseased condition. Men seem to be on a rush in their purpose to make money, and neglect their health, when attention to a few details might prevent them from an attack of illness, or keep them in a healthy condi-

tion. Women, through their false modesty, will sometimes defer or prevent the action of the bowels, and in consequence suffer for years. I remember once to have had a lady patient who boarded at one of the hotels of the city, who came to me to be treated for obstinate constipation, and among the questions that I asked her was, whether her room was convenient to the water-closet. She replied that it was not, and that she was compelled to go through a couple of long halls before reaching it. I then asked her if it was not a fact that if she saw a gentleman in the hall, or met with one on the way, she would not turn back. Her answer was: "Of course I do." After giving her some general directions, I suggested that she have her room changed to the floor on which the water-closet was located, and positively instructed her to allow nothing to interfere with her going regularly and at a certain time to have her bowels evacuated.

Persons will allow business or pleasure, or even trivial things, to interfere with this very important matter. A few days ago a lady said to me—who was the wife of one of my patients at the time—that her bowels had not moved for a week, for the reason that she had been so constantly at the bedside of her husband. Of course this was no excuse, but it shows the necessity of the physician being on constant guard to prevent any such thing occurring.

The regular performance of this act is one of the prime conditions to good health, and a departure from it results in distress. Women will ride in their cushioned carriages and never think of the importance of taking physical exercise, until they are stricken with some malady as the result of their imprudence. We often hear persons say that they are naturally costive. This is a misconception, for Nature has nothing to do with such a condition. Doctors sometimes lose their health by owning and using a carriage constantly in their practice. It never was intended that people should live at such ease. The daily toiler who walks to and fro from his work and wields a sledge-hammer during the day may not have as many of the luxuries of life as the rich, but he has

good health, which is a boon that money can not buy. Families who place themselves under our medical treatment deserve also to be told of those things which will prevent sickness, and it should never escape our minds to inform parents how to instruct children in the simple rules of health.

CHAPTER XXIII.

VILLOUS TUMOR OF THE RECTUM.

I BELIEVE a villous tumor to be the rarest of all rectal affections. In my experience of fifteen years devoted to rectal practice I have seen but one case. Mr. Quain in his work gives the details of only two cases that had fallen under his observation. Allingham, Sr., with his large experience, only reports eleven cases, three of these having been under the care of Mr. Gowlland, one in the practice of Mr. Cooper, and three under Mr. Goodsall's care. Mr. Symes reports two cases, and Cripps, Goselin, Van Buren, Bryant, and Cook one case each.

The tumor is likely to be mistaken for a polypus, because it is attached to the bowel by a stem. The stem itself, however, is of some significance, as in polypi it is round, and in the villous tumor is broad. Like polypi, the pedicle may be long or short. Some instances are reported where no stem could be detected, and the tumor was attached by a broad, thick base. Allingham says: "In cases where the growth arises from the perineal surface, as a practical point worth remembering, I should say it is by no means impossible that a pouch of peritonæum may be dragged down into the pedicle, and in such a case, if the ligatures were applied close to the bowel, the peritonæum might be tied up with it." I can scarcely understand how the peritonæum could be included in the stem of such a growth.

I will consider the symptoms of a villous tumor by reciting the case which occurred in my own practice:

CASE.—Mr. McC., aged about fifty-five, of small stature but stout build, came into my office saying that he desired to

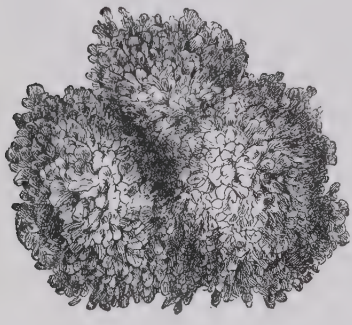
consult me in regard to his piles. He sat down and gave me a history of their protruding at stool, and of his pushing them back after each evacuation of the bowel. He said this had been the case for about two years; that they had always bled a little when prolapsed, but that for the last two months he had lost so much blood that it was showing upon him, and that upon one occasion he had fainted during the act of defecation, from the excessive loss of blood. When asked as to the quantity, he replied that at the last action of the bowel he had lost fully a pint. I appointed the next day to go to his residence and operate upon him. Taking my assistant along to give the anæsthetic, I found upon an examination that the tumor was protruding from his rectum, and that it could be easily ligated without the use of the anæsthetic. I immediately detected, however, that the tumor was not hæmorrhoidal. It was a large spongy mass, bleeding freely at the time, very soft to the feel, and attached to the bowel by a stem about one inch long. While my assistant held the buttocks apart, I threw a silk ligature as close to the attachment of the pedicle as possible, tied it firmly, and cut the tumor off. It proved to be a villous growth. No further hæmorrhage took place, and the man regained his usual physical condition.

Dr. George J. Cook reported a case of villous tumor in the Weekly Medical Review, a short time ago, that is more than ordinarily interesting, and I therefore take pleasure in inserting it here:

"On December 28, 1887, Dr. Cline, of this city, called me to see Mrs. S., aged forty, formerly robust and healthy, the mother of several children and still menstruating. About five years previous she began to have at times some pain in the rectum and sacral region, dull and aching in character, and noticed occasionally a free discharge of mucus. These symptoms of rectal disease gradually increased until the pain became almost constant during the day-time, when she was attending to her household duties, and the discharge of mucus of daily occurrence. During the previous six

months she had been losing flesh and strength gradually, and was now confined to her bed most of the time on account of general weakness and the distress in the rectum when in the upright position.

"For two months past a tumor would present at the anus while straining at stool, but never entirely prolapsed, and occasionally some blood was lost. There was one natural passage from the bowels daily, but several times a day a large quantity of thin mucus would pass, sometimes a half-pint or more at once. Her appetite was poor, could take but little food, and her skin was pale and waxy in appearance. Her history and appearance suggested some form of malignant disease. On digital examination, I recognized a tumor resting in the rectal pouch, well above the internal sphincter muscle. It was different from anything I had ever before felt in the rectum; so slippery that it was with difficulty held beneath the finger for examination, of a spongy consistence, with no induration, and firmly attached to the posterior rectal wall. When the patient was placed under an anæsthetic and the sphincters dilated, the tumor was easily drawn outside. It was the size of a large hen's egg, of a bright arterial color, had no pedicle, but grew from the gut wall by a broad base. A fold of mucous membrane was dragged down to allow it to come outside the anus. There was some thickening of the fibrous tissue at the base, and from this sprang long, villous processes which composed the bulk of the tumor. Each one of these increased in size from the base toward the free extremity, giving its ends a clubbed appearance. The outline of the tumor was very distinct. There was no surrounding zone of congested or inflamed membrane, but the healthy tissue came up to the outer row of villi. The contrast in color was marked. The surrounding membrane was pale, owing



Villous tumor. (Cook.)

to the great debility of the patient, and the tumor was of a bright arterial hue. It was removed by passing a double ligature through the folds of mucous membrane above it, tying and then cutting off with a knife. The ligature came off after a few days, and the patient made a rapid recovery, soon becoming strong and more fleshy than ever before in her life."

As these cases are so rare and so easily diagnosticated if found, it is scarcely necessary to say anything further concerning them, except that when detected they should be removed, either after the manner suggested by Cook or as practiced in my own case.

Since the first edition of this book was published I have removed another villous tumor of the rectum, which makes the second in eighteen years of rectal practice.

CHAPTER XXIV.

MALFORMATIONS OF THE RECTUM AND ANUS.

It is estimated that in every 4,538 births there is one of malformation of either the rectum or anus. Anger states that he met five instances of imperforate anus in two thousand midwifery cases. Duncalfe reports five cases in two thousand births. Teinturier, in a paper read on this subject, mentions that he had collected statistics of seventy-three thousand confinements, and out of these there were only seven cases of imperforate anus. So it can be clearly seen that these cases are exceedingly rare, and their observation nearly accidental. I shall not consider it necessary to deal with the pathology of these malformations, but desire to state that Ball has discussed this subject very ably and fully in his admirable work on The Rectum and Anus.

The following is Bodenhamer's classification, which, in a certain way, is the best that I have ever seen on the subject: "1. This species consists of a preternatural narrowing or stenosis of the anus at its margin, and occasionally extending a short distance above this point. 2. In this species there is a complete occlusion of the anal aperture by a simple membrane, or by the common integument, or a substance analogous to it, more or less thick and hard. 3. In this species there is no anus whatever; the rectum, being partially deficient, terminates in a *cul-de-sac* at a greater or less distance above its natural outlet. 4. The anus in this species is normal, but the rectum at variable distances above it is either deficient, obliterated, or completely obstructed by a membranous septum. 5. In this species the rectum terminates externally by an abnormal anus, located in some unnatural situation, as at

some point in the sacral region or at different points in the perinæum; or it may be prolonged in the form of a fistulous sinus, and terminate by an abnormal anus at the glans penis or the labia pudendi. The normal anus being generally absent, its functions are more or less imperfectly performed by the abnormal one. 6. The rectum in this species opens preternaturally into the bladder, urethra, or vagina, or into a cloaca in the perinæum with the urethra and vagina. In these instances the normal anus does not generally exist. 7. In this species the rectum is normal, with the exception that either the vagina or the uterus opens preternaturally into it. 8. In this species the rectum is entirely wanting. 9. The rectum and colon in this species are both absent, and some other portion of the intestinal canal terminates externally in the preternatural anus in some extraordinary part of the body, such as the umbilicus, the left iliac fossa, the lower part of the abdomen, just above the symphysis pubis, below the scapula, and at the side of the face, as it has been known to have occupied each of these situations. No normal anus ever exists."

The author just quoted from has shown a wonderful amount of research in collecting statistics on the subject and in reporting his own cases; therefore it is well to note the nine classifications which he gives in order to demonstrate what curious facts exist in contemplating these malformations. A more practical division would be the following:

The Congenital Malformations of the Anus.—1. Narrowing or partial occlusion. 2. Total occlusion. 3. Complete absence.

Malformations of the Rectum.—1. Partial occlusion. 2. Complete obliteration. 3. Unnatural termination. 4. Absence of the rectum. 5. Communication with the vagina.

I say for practical reasons, and, looking to an operation for relief, this, to my mind, is a better classification. Recognizing the fact that more serious conditions do exist, as has been proven by Bodenhamer's nine divisions, we must also admit, first, that a number of them are exceedingly uncommon; and,

second, if found, but very little, if anything, can be done for them.

Symptoms.—The symptoms of a congenital obstruction of the bowel are usually discovered by the mother, for at the time of delivery it is scarcely every noticed by the attending physician. She may, within a day or two, call attention to the appearance of the child in this particular, or if four or five days have elapsed the child will begin to vomit, and the abdomen becomes distended. The most difficult part of the matter is to make out a clear diagnosis of the manner or form of malformation that exists. Very grave mistakes have been made, and surgery done which was not warrantable. If it be a case of occlusion of the anus by a thin membrane, it can, as a rule, be easily diagnosticated. By a close scrutiny it will be observed that there is a slight pouting at the natural site of the anus and a bluish appearance noticed. By the touch it will be indicated that just beneath this thin septum is the natural contents of the bowel.

But there may be a condition of occlusion of the anus, complicated also with an occlusion of or an entire absence of the rectum; and yet this can not be definitely told until an incision is made. Granting, however, that the anus exists in its natural site, the symptoms of vomiting and distention of the abdomen may occur, and an occular inspection would not reveal the cause of the trouble. Therefore an introduction of an instrument or the finger into the rectum may reveal the condition, which may be an obstruction in the rectum, and yet an obstruction may exist beyond the reach of the finger. In such a case, if the symptoms are positive, it will be necessary to use a longer sound, or to inject water, and observe whether it passes beyond the part or not.

Prognosis.—Physicians are often able to give much comfort to the friends of the afflicted by assuring them that a patient can be fully restored to health, or, if not, can be put in a condition in which they can enjoy life. We must, however, admit that the prognosis in these cases—malformation of the rectum—is exceedingly grave. Not only is it the case that if

an operation is done in the majority of cases it proves fatal, but that, if it is successful so far as the operation is concerned, the effect is to condemn the infant to a life of suffering and disgust. In a paper read before the Ninth International Medical Congress, held at Washington, the caption of which was, When is Colotomy Justifiable? I stated, as one of my conclusions, that I did not believe colotomy should be done where there was a congenital absence of the rectum, or where the malformation consisted in preternatural terminations of the rectum. I argued that in this matter, in which the infant could have no option, I believed that it was best not to inflict upon it a life of misery and disgust, taking in consideration also the fact that opening the colon, either in the groin or the loin, usually resulted in death. Cripps says, in his excellent work: "A doubt seems to have risen in the minds of many as to whether any attempt should be made to deal surgically with such a condition, as the only effect of successful surgical interference is to condemn the infant to a life of suffering from a contracted anus or an artificial opening in the groin." He adds: "It would appear to be scarcely in the province of a surgeon to constitute himself the arbitrator between life and death."

In answer to this proposition I would say that after a person had attained to manhood, and were to have the question asked whether, if he had had the power to decide, would he have had the operation performed, I can not imagine that a single one would answer in the affirmative. It has been seriously discussed by intelligent people whether life is worth the living at best. Surely under the conditions that would exist after either one or the other of the operations suggested for such malformations, life would be anything but worth living. It is fortunate, however, that the cases are few where a surgeon is called upon to give an opinion. But, as far as I myself am concerned, I must still hold to my original impression that it is not best to do an operation under such circumstances.

Treatment.—In the cases of congenital malformation of the

anus, especially those detailed by me in this chapter, it is fully warrantable to do enough surgery either to clear up the diagnosis or to see if relief can be afforded. If a partial occlusion of the anus exist, it can be enlarged. If a total occlusion presents itself, an incision should be made through the thin or thick membrane. In my practice I have seen two cases of congenital malformation of the rectum, and one case of an occlusion of the anus by a thin membrane. My first case was a male child with no trace of the anus at all. I made an incision in the natural site to the depth of two inches and no rectum could be found. I desisted from any further cutting, and the parents objected to a colotomy, for which decision I was very thankful.

My second case was a female child in the wards of the City Hospital, and was very much like the first. I could find no unnatural opening anywhere. An incision was made but no bowel was found. The depth of the incision was not more than an inch and a half. It was decided by the hospital staff to do a colotomy the next day, but fortunately, for the child at least, it died within twenty-four hours.

Both of these cases were, in a certain way, well adapted for a colotomy, because there was no unnatural opening anywhere, and yet I could not bring myself to the conclusion that such operation was to be preferred to cutting down at the natural site, or that a colotomy was justifiable at all.

The following abstract from Cripps's table of operations for these malformations, shows this mortality:

1. Colon opened in the groin	16,	died	11
2. Colon opened in the loin	3	"	2
3. Puncture	17	"	14
4. Coccyx resected	8	"	5
5. Perineal incision or dissection	39	"	14
6. Communication between the rectum and vagina	14	"	1
7. Miscellaneous	3	"	3
	100		50

Cripps says: "Of course it is not right to compare the death-rate following upon Littre's and Amussat's operation with that resulting from operations *in situ*."

This point is well taken by the author when we remember that in the majority of cases in which the colon was opened the operation was only undertaken as a last resource after failing to find the bowel in the perinæum. I would ask if it would not have been better, knowing what a fearful mortality results from operations *in situ*, to have desisted from performing a second operation, which was in itself more dangerous than the first, and made doubly dangerous by having done two operations instead of one. I would also call attention to the fact that at first glance Cripps's table would appear to be highly satisfactory, when we consider that one hundred operations were done for malformation with only fifty deaths, showing a percentage mortality of fifty. But if an examination of his table is made, it will be noticed that fourteen operations were done, establishing a communication between the rectum and the vagina, with one death. This operation can scarcely be called an operation, in so far as the average mortality is to be made up for the surgery done for malformations proper. We would naturally suppose that such an operation as is called for in this condition of affairs would not result in death at all. But when we come to consider the two operations which could be called legitimate, or at least those usually done for malformations—viz., colotomy and deep cuts or dissections at the natural site—we witness a very heavy mortality. Indeed, I would consider colotomy to be the proper operation in the majority of cases of malformations of the rectum, if I believed in this operation for the relief of this condition at all, first, because it gives absolute relief to the patient if the operation is successful; and, second, there is really less surgery done. But another reason which leads me to this conclusion is, that it will be observed in the cases where Cripps practiced puncture seventeen times he had fourteen deaths. Now, this same mortality has followed this method of procedure in the reported cases of many surgeons, and although it would appear that we should take warning from such a mortality rate, it is a well-known fact that this is the common operation for such conditions.

I do not think it can be gainsaid that, first of all, a careful dissection *in situ* should be made in these cases of malformation for the purpose of finding the bowel, and yet I can not agree with the authors who say that if the bowel is not found, the operator should proceed at once to open the colon. To the contrary, recognizing how difficult it is to diagnose these cases properly, as to what the real unnatural condition, etc., is, and also that by making a dissection and the object fails, a double complication has been established if we do a colotomy, I should hesitate before opening the colon. Instead of proceeding at once to do a colotomy after a failure at the natural site, I think time should be taken to explain to the parents not only the danger of the second operation, but the disgusting effects which will result. As far as safety is concerned in doing an operation in one or the other locality, I believe that colotomy would be accompanied with the best results, and, if the consent of the parents has been obtained, it would be better to do this operation first, thereby saving a double operation and incurring additional risk. If it has been determined, therefore, to open the colon, the question would be as to which was the best site—in the loin or the groin. In dealing with colotomy in another chapter, I have taken occasion to say that I believe Amussat's operation is to be recommended in cases of cancer of the rectum or sigmoid flexure above Littre's ; but in these cases of malformation in the infant I certainly believe that the groin should be selected for the operation. The manner of doing this operation has already been described. It has been questioned by surgeons whether the right side or the left should be selected, because of the frequency with which the sigmoid flexure is turned toward the right. The cases are very frequent where this part of the colon is found on the right side in the infant, and yet I believe with Cripps that the operation is more likely to open the sigmoid flexure on the left than on the right side. I think that the scheme which consists in passing a bougie or catheter by the groin opening into the *cul-de-sac* of the bowel below, and pressing down on the pel-

vis, and to be cut down upon from the perinæum, should be deprecated. I scarcely think that in any case such a procedure is justifiable. It is not only dangerous, but it is unnecessary. If a colotomy has been done, we should be content with the operation.

It can be said of these operations, whether by dissections *in situ*, punctures, or either one of the colotomies, that they are generally unprofitable and dangerous. I have not seen fit to occupy much time in discussing the malformations, and to those who desire a full and complete dissertation on the subject I would respectfully refer them to the works of Curling, Bodenhamer, Cripps, and Ball.

CHAPTER XXV.

POLYPUS RECTI.

By common custom and consent, any pedunculated growth found in the rectum is designated "polypus." Unquestionably this is just as good a division or term as can be used, for the moment that we attempt to classify growths that have no pedicle as polypi, we are apt to embrace tumors that have a pathology of much more significance than the term "polyp" is meant to convey. Again, on the other hand, we might fall into grave error if all neoplasms found in the rectum with a pedicle were called polypi, for, as Mollière says, growths, both benign and malignant, hard and soft, are sometimes attached to a pedicle. It must be admitted, however, that an error is more likely to be made in calling growths without a pedicle polypi, than in using the term to describe neoplasms that have a stem. In other words, growths which have no pedicle, or are not pedunculated, are more apt to be malignant than those having a pedicle. Such descriptions are intended to convey the idea that true rectal polypi are benign growths. And yet Van Buren says that he has seen pedunculated adenoma in the adult recur after removal as undoubted epitheliomata. I have never seen a case of this kind. If a section is made of a true adenomatous polypus and its physical properties considered, one would hesitate before denying the possibility of a recurrence after removal.

It must be admitted that polypus recti is a rare affection—that is, when a strict histological definition is adhered to. It is common to find cutaneous or muco-cutaneous growths just within the bowel which are often called polypoid. Allingham cites the fact that a small tumor of this kind is coin-

cident with fissure. I have found them in patients that had the injection plan practiced upon their hæmorrhoids. Such growths as these must of course be excluded in making up a statistical table; and when I say that polyps are rare in the rectum, reference is had to true polypoid tumors. My individual experience corroborates that of those observers who say that these growths are most frequently found in children. Allingham says that he has seen the affection more frequently in older persons. In determining the question between malignancy and non-malignancy of these tumors, I believe that carefully prepared statistics will prove that polyps found in the adult will sometimes prove to be malignant, when in the infant no such change occurs. Why this is so no one can explain, but I have never read of a case of polypus recti in a child assuming a malignant character, yet numerous instances are cited where it has occurred in older persons. Indeed, so suspicious are these tumors in the rectum that when a large so-called polyp is encountered with a broad base, be it soft or hard, a suspicion is warrantable that it is malignant. It must be conceded, however, that authors report many adenomatous growths of this kind as benign. But still the question might very properly be asked, May they not at some future time assume the characteristics of malignancy, or return after removal? A few cases are reported where these growths have assumed an enormous size. Bowlby reports a case of a woman who, while straining at stool, caused to descend a tumor the size of the fœtal head; it had a pedicle an inch and a half in diam-

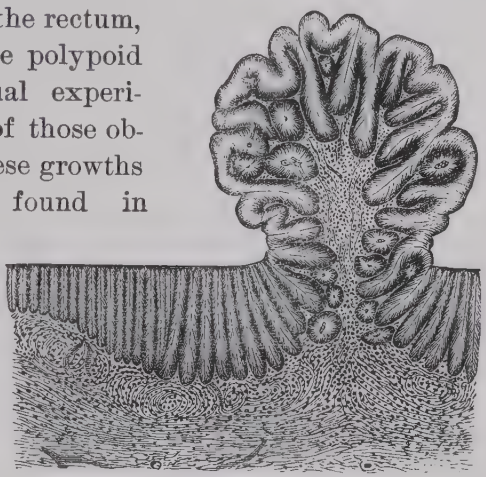


Diagram showing the formation of adenomatous polypus. (Esmarch.)

eter, attached to the anterior wall of the rectum, about four inches above the anus. The base was transfixed, ligatured, and the mass cut away. The tumor weighed two pounds. Esmarch reports a tumor of this kind which weighed four pounds. These, of course, are rare exceptions. Polypi are usually small, not larger than the end of a medium-sized finger. The usual division as to variety is soft and hard, the former being follicular and the latter fibrous. It is said that the soft is found in children, and the hard in older persons. This may serve as a rule, but I have seen the rule reversed. It is taught that it is exceedingly dangerous to tear these tumors off, or to have them detached, because of hæmorrhage. I have pulled them off by force during an attempt to ligate them, and have seen them detached by straining, etc., but I have never seen but one case where the bleeding was excessive. However, it is best to be cautious, and in all cases a ligature should be thrown around the pedicle in pedunculated growths if possible. It will sometimes be found a difficult task to do this, for in many cases the pedicle is slender, delicate, and perhaps friable, and in the effort to ligate, it is severed, and all attempts to recover the stump is futile. Pedunculated growths are found in any portion of the intestinal tract, but unfortunately a correct diagnosis can not be made except when the tumor is found in the rectum. Such growths have been discovered in the colon, cæcum, ileum, jejunum, and duodenum, but they are most frequently observed in the rectum. Whether this is due to the fact that in the rectum they are more clearly discernible, or that post mortems are too rare to substantiate their existence in other portions of the tract, is a question. What part pedunculated growths would play in disease located in other portions of the intestinal tract other than the rectum it is difficult to say.

It is safe to presume that a sudden hæmorrhage from the bowel might be due to the tearing off of a pedunculated growth either in the colon, cæcum, or ileo-cæcal valve. According to Leichtenstern, these growths are found in a relative frequency of thirty in the ileum and ten in the colon to

seventy-five in the rectum. The balance of the tract has a less ratio in proportion to the rectum. Polypi of the rectum are usually attached to the wall of the gut by a very slender pedicle of mucous membrane. Especially is this true in reference to children. There can be no doubt but that these delicate growths are sometimes passed in infancy or early childhood at stool, unnoticed by the parent, and that the child suffers no ill in consequence. The vessels that go to supply these growths are sometimes of considerable size, and arterial pulsation is distinguished. Some authors speak of the danger attending their attempted removal, and apply specific rules of safety to be observed in attempting the same. I must confess that I have never seen any danger supervene upon an unsuccessful attempt to ligate them but once, although I have often failed to find the stump after breaking them off, but generally making it suffice to twist or tear the growth away. Of course papillomatous tumors of the rectum are to be classed as polypi, and yet this statement must be qualified, for they have a remarkable tendency to bleed. But it must be considered that they are attached to the wall of the bowel by a broad pedicle, which is, as a rule, easily ligated.

Complications.—Ball says that in the upper portions of the intestine rectal adenoma is not an uncommon cause of intussusception. Personally I have never known of such a case. Esmarch mentions a case where the whole lower bowel was blocked by a mass weighing four pounds. This mass may have been a simple adenoma, but, if so, it was a rare exception. It is of much importance to consider, under the head of complications, the existence of such growths as interfere in the healing process of wounds around the rectum or help to complicate the diagnosis of other diseases. It is no uncommon thing to find a fissure of the anus or rectum coincident with a polypoid growth. It would appear sheer ignorance to do the operation for fissure and leave the polyp which was its cause, yet it must be admitted that this is sometimes done. True, a plausible excuse could be offered in that polypoid

growths often elude the finger or may lie high up the bowel, the length of the pedicle allowing them to do so. But oftentimes the eagerness of the operator to relieve the pain of fissure leads him to divulse the sphincter and neglect any search for the cause. Again, it is a well-known fact that a polypus, especially of a fibrous character, may by irritation excite to an ulceration of the mucous membrane sufficient to end in the formation of an abscess or a fistula in ano. To operate upon the fistula and leave the polyp would be a grave error, yet it has been done. It is well recognized that polypoid tumors frequently coexist with hæmorrhoids and complicate such cases. I have narrated in another chapter a case where I operated for internal piles and left through mistake a large polyp, which descended in a few days, and it was also ligated. Another case is mentioned where a surgeon mistook a large polyp in his own person for a hæmorrhoidal tumor. One of the common complications of polypi is ulceration produced by friction of the polypoid tumor upon the mucous membrane. It may be that the pedicle is just of sufficient length to allow the tumor to play over, or be engaged, by the sphincter muscle, and as a consequence a fringe of ulceration is established around the upper margin of the muscle.

I have seen this condition so marked that the simple stretching or divulsion of the muscle was not sufficient to cure it, but it was necessary to curette in order to insure positive relief. In one case that fell under my observation a polyp acted as a valve, closing or obstructing the anus during the act of defecation. The pedicle was not long enough to allow the tumor to protrude, but of sufficient length to permit it to act as an obstructing valve. By its removal, of course, all the trouble was dissipated. It can be readily understood that a polyp, acting as a constant source of irritation, could produce a teasing diarrhœa, for the relief of which the tumor would have to be removed. Allingham says a polyp may bring on obstruction of the bowel by setting up inflammation, which occasions paralysis of the muscular coat

of the intestine. How such a result could obtain I can not quite understand. An inflammation of the rectum (proctitis) is not usually attended with paralysis of the muscular coat, nor does it cause an obstruction of the bowel. It might be that such a condition of affairs would lead to an impaction of fæces, which would amount to an obstruction, and possibly to paralysis of the muscular coat, but this would not be from inflammation *per se*.

Symptoms.—Polypi, without some of the complications mentioned, have very few, if any, symptoms. I am sure that such tumors could exist for an indefinite length of time, and, unless caught by the sphincter muscle and made to bleed, would go unnoticed. Hæmorrhage is generally the first symptom in this affection. Whenever the mucous membrane at the margin of the anus is sufficiently irritated by the passing in and out of a polyp, the second most prominent symptom is made manifest—namely, *pain*. In children suffering from a diarrhœa, with the passage of some blood, or blood and mucus, accompanied with a disposition to strain at stool, a polyp is to be suspected even if no protrusion is noticed. I witnessed a violent hæmorrhage in one patient suffering from a polypus which occurred before the tumor was torn off, but which ceased entirely after the tumor was passed by the bowel.

Diagnosis.—It is not difficult to diagnosticate these tumors. By passing the finger fully into the rectum the pedicle can often be hung over it. True, they sometimes elude the finger, especially those with a long pedicle, but by repeated attempts they can be detected. The attachment of the pedicle may be high up the rectum, or even in the sigmoid flexure, and the tumor resting there may not descend even in response to a straining effort. When low down, it is quite easy to feel both the pedicle and tumor. Some confusion has arisen over diagnosticating these tumors from internal hæmorrhoids. When it is remembered that the latter have no pedicle, and that there is a strict contiguity between the pile and bowel, the differential diagnosis is plain. Internal piles

have their origin low down, just within the margin of the sphincter muscle; polypi are generally attached higher up. Piles have a previous history, while it is often the case that the first thing noticed by the patient suffering from a polypus is a sudden protrusion at stool. Procidentia recti is to be diagnosticated from polypi by its even protrusion which encircles the anus, its velvety appearance, its lack of characteristic hæmorrhage, the absence of a pedicle, and the inability of the surgeon to isolate or circumscribe a tumor.

Treatment.—The treatment of a polypus is simple. All such tumors should be removed, and the simplest way to do this is to ligate them. Sometimes small polypoid growths are found near the margin of the anus; these should be cut off. It is much the best plan to use the knife or scissors than to attempt to twist or tear them from their attachment. They are usually of a fibrous structure, and their excision is attended by very little hæmorrhage. For polypi attached higher up than the anal margin, it is the safest and best treatment to ligate the pedicle.

It makes very little difference what the nature of the tumor is, whether fibroma, papilloma, teratoma, or lipoma—they should be removed. The pathological nature is best determined *after* rather than *before* removal. In attempting to ligate the ordinary polypoid tumor, great delicacy must be observed in the manipulation, else the pedicle will be broken. This is especially true of such growths in children. They will scarcely bear the use of any forceps, and I have generally ligated them by having an assistant catch hold of the tumor with the fingers while the ligature is applied to the pedicle. Even under these precautions they are generally pulled off rather than ligated. The idea advanced, that the fear of hæmorrhage is great under such a contingency, is, I am sure, chimerical in the *majority* of instances. If the pedicle is large, and is firmly attached to the wall of the gut, it is best to transfix it before tying. The tumor should then be cut off near the ligature. In some few cases the operation can be done without an anæsthetic, but generally it is best to

use one. Ball says that the entire thickness of the rectal wall may be invaginated in it, carrying with it possibly a process of peritonæum. I have never heard of such a case, and can scarcely understand how it could be. If a decided hæmorrhage should occur by the ligature slipping off the pedicle, or the tearing away of the tumor before a ligature could be applied, it would be useless to waste time in trying to find the stump, but the rectum should be plugged at once. Any after-treatment following the ordinary ligation of polypi is unnecessary, except to have the patient kept quiet for a few days, at the end of which time an enema might be given, simply to cleanse the bowel.

It may be appropriate to report in this chapter a very unique case just operated on, although, as far as I can trace, no history of polypoid growths meets the description of this.

A few weeks ago Drs. Lewis and Coffman referred to me, for opinion and operation, a young married woman who gave the following history: Aged twenty-five, married six years. Had one child, aged four years. A short time after her child was born she noticed a protrusion, which occurred suddenly, from the rectum. During the time that it was protruded she was greatly nauseated and suffered a good deal of pain. Her physician was sent for, and he reduced the protrusion, and all reflex symptoms disappeared. A few months thereafter the same thing occurred and the same treatment was afforded. From this time on, at occasional intervals, this protrusion would take place, until it became a source of embarrassment and pain. Her physician, who is one of the most competent in the State, decided to anæsthetize the patient for the purpose of defining, if possible, the nature of this protrusion, which he recognized was neither a polypus nor hæmorrhoid. After this examination he wrote me, saying that the case was unlike any that he had ever seen, mentioning the fact that while under ether the patient of course could be carefully examined, but that he was unable to detect any tumor at all. Upon his advice the patient came to me. I said to her, in that her physician had examined her under ether, that I

preferred to see the tumor when protruded. On the evening of the third day, after a long walk, the tumor made its appearance. It was as large as a small orange, the shape of an egg, and covered by mucous membrane. She was nauseated at the time and suffering pain, and I took no further time than to discover that the tumor was apparently filled with semi-fluid contents. The next morning, under chloroform, I brought down the tumor, and, pushing my finger in the rectum, could trace a long pedicle (?) into the sigmoid flexure, but yet could not find its attachment. I transfixed and ligated the pedicle and cut off the tumor. Upon cutting into it I was surprised to find it filled with a substance that looked like semi-fluid degenerated fæcal matter. The patient was put to bed and suffered no shock. On the fourth day her bowels moved freely, and she made a quick recovery. The specimen was submitted to Dr. Carl Weidner, bacteriologist of the Kentucky School of Medicine. He found that the tumor consisted of mucous membrane both for its external and internal covering; no muscular or serous coat. The contents he could not define, although he gave it as his opinion that it was decayed fæcal matter, and had been inclosed for several years at least. His theory was that the tumor was a diverticulum of the colon. My idea is, that it was an enlarged follicle of the colon, and that the contents was not fæcal matter.

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THE END.

A TEXT-BOOK OF GENERAL SURGERY.

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VOLUME I.

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